

**RELATIONSHIP BETWEEN TRAINING AND FIRM PERFORMANCE FOR
EARLY INDUSTRIALIZING ECONOMY:
CASE OF TANZANIAN FIRMS**

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**Dissertation presented for the degree of
Doctor of Philosophy (PhD) in Development Finance
at the University of Stellenbosch**

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March 2020

Declaration

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Abstract

Industrialization is among the recent key economic moves for most African countries to maximize productivity and create sustainable jobs. With respect to that, countries design policies to strategically invest in human resources through different practices, one being training. Normally, the average policy cycle has a stage of monitoring and evaluation. Since countries use their scarce finances to develop their human capital, it is necessary to evaluate the progress in the process for review purposes. This study is undertaken to observe training effect on firm performance considering the employees' quality defined by education level, its effectiveness in relation to existing needs and employers' perception and understanding the causes of effect variation across firms. The dearth of literature in developing economies, the mixed conclusions from the existing literature on the topic, and the existing need for process effectiveness models were among the motivation factors for this study. Using the case of Tanzanian firms, the World Bank's Tanzania Enterprise Skills Survey dataset released in 2017, and the field data collected in the country's strategic regions were used in the analyses.

In Chapter 3, a systematic moderation model is used to analyse the interaction effect of human capital sources on firm performance measures. The results show regardless of the sector, size or performance level of the firm, for a positive magnitude to be realised from training, there should be inputs from other human capital sources such as education. In Chapter 4, a moderated parallel mediation model is employed to realise the effectiveness of the conducted training through matching the demanded and supplied skills. The results suggest that above a specific threshold point of training needs, the effectiveness of training on employees' skills status is minimized. This implies that the supplied skills should match the existing needs among the key success factors of training effectiveness. In Chapter 5, qualitative analysis was done using the firms' top managers and employees' responses on the viability of training as a human capital development strategy for firm performance. From the thematic analysis findings, the managers agreed that training effects vary across firms due to: the nature and implementation of firms' customized training policy, the need assessment process, the effectiveness success factors such as employees' qualities, firms' response to external shocks, and managers' willingness to change.

The study concludes that the relationship of training and firm performance depends on the process of effectiveness. Once effective training exists, one can continue arguing about the

effect of training on the firm's performance. This can be viewed as a two-stage training effect analysis towards firm performance as presented in the conceptualized model in Chapter 6, which is an output of all the findings in this study. It is recommended that the monitoring and evaluation of training initiatives should be done regularly, not only at the firm level, but also at a national level for adjusting the strategies employed where need be. However, the evaluation should consider process analysis for the decision-makers to understand which areas in particular requires extra attention.

Acknowledgements

First, I return all the glory to the Almighty God for guiding me through, without His mighty hand nothing would have been possible. He made this journey to be of many lessons to me, not only academically, but also life in general. When I was in the mountains and the valleys, He continue reminding me of His word from Isaiah 9:6b from which He became my Wonderful Counsellor, Mighty God, my Everlasting Father and the Prince of my Peace that kept me going.

Secondly, I would like to thank the University of Stellenbosch Business School for admitting me to the PhD programme of Development Finance. Special thanks goes to the Graduate School of the Faculty of Economic and Management Science for offering me the three years scholarship to pursue my doctoral studies. In the midst of the very competitive process, they realised the potentials I have for undertaking this project and offer me the full support I required and forever I will be grateful.

I am indebted to my main supervisor, Dr. Nyankomo Marwa. I shall always acknowledge and appreciate his tireless academic and moral support that I required to finish this study. He became a supervisor, mentor, and a friend. I am also grateful to my co-supervisor Prof. Neema Mori for her constructive comments and her sisterly advice throughout my PhD journey. I would also like to acknowledge the statistics advice and contribution made by Prof Martin Kidd from the University Centre for Statistical Consultation in this thesis. Special thanks to Prof William Green and Prof Joseph Hair who responded to my methodological questions, which made the findings of this thesis richer.

I am also thankful to my employer, the University of Dar es salaam, Tanzania, for the given support to undertake my PhD studies. Am grateful for the study leave which they gave me for all the three years, and the financial support which covered 100% of my fieldwork in Tanzania. I also thank my mentor, Dr. Elinami Minja for advising, guiding and supporting me before I commenced and during this PhD journey. My head of department Dr. Evelyn Richard, my coach Prof. Marcelina Chijoriga, I appreciate all the support and encouragement you gave me.

I would like to acknowledge the great support from the Confederation of Tanzania Industries management, for allowing me to have access to their members and supporting me with all the needed requirements to make the fieldwork of success. Special thanks to all the firms' managers and employees who agreed to participate in this study, their contribution significantly made this thesis complete. I also thank the management of Small Industries Development Organization in Tanzania for allowing me to interview their members within their processing zone. Their information highly contributed on the recommendation made in this thesis.

Special thanks to Dr. Jaco Franken, his constant and consistency support for a comfortable PhD journey is highly appreciated. The work of organizing the PhD seminars, his attendance to each one of them, being in the office to listen and address our academic issues, finding solution to any problem forwarded to him, is highly appreciated and always acknowledged. I would also like to thank my fellow PhD students, especially the Graduate Economic and Management Scholarship group for their academic and social support. All the presentations we were having every Monday and constructive comments we discussed, made this work possible. The social debates we had during the working breaks at the A. I. Perold offices made the PhD journey interesting.

I am indebted to the members of the Stellenbosch International Fellowship for their constant prayer, friendship, caring and support. Their support made Stellenbosch feel home for me and my daughter. My fellow worship team members, the time we spent practicing and leading worship every Sunday was always a battery charger for my spirit, and the power I needed to keep me going. Special thanks to my mama Maggie, the pastor's wife. Mama, am indebted to the crying shoulder you gave me for all these three years, this will stay in my heart. I also thank Pastor Jurie for his heart of ministry for international students. That is God given. He gave us a family away from home and it makes our academic journeys felt lighter. May God bless each one of you.

I would also like to appreciate my property owner Mr Erich Schiemann for opening his house for me and my daughter, and gave us a home in Stellenbosch for all the years we have been here. Although we were only renting at his house, he was ready to become a grandpa and a father to us. His advice, support, prayers, and encouragement, we are forever grateful, always asking me, what else can I do? My neighbour and sister, Mrs. Jackeline Kirui, for her

exceptional care and love she showed me for the two years we stayed together. I am thankful for always being ready to stay with my daughter when I had to travel for days and sometimes weeks. She was never tired and always ready to support. Even when I was in my worst moment in Stellenbosch when I got the two consecutive operations in 2018, I was not worried after being discharged because I knew Jackie was there to help my daughter and me before my immediate family arrives. God bless you my friends.

I am also thankful for my father Robert Towo, who always urging me to study hard and finish with success. He always said “when you have faith, God will lead you through”. Among his wishes in life was to see me accomplishing my PhD studies, and his support through the three years was significant. I thank my mama Esther Towo and Eve Mrua, my siblings, my in-laws Prosper and Lilian Mollel, who encouraged and prayed for me throughout my PhD journey.

Finally yet importantly, I would like to thank my family, my loving husband Remy for always being there for me since I applied for this position until the end. I still remember his push for me to pursue a PhD, and always assured me that he will support and be patient until I finish. It was not easy for us to stay far from him for three years because of the full-time programme I was enrolled, but he always encouraged me to focus and finish my studies before I return home. Words will never be enough to express my gratitude to you, but you will experience my appreciation.

My sweet daughter and best friend Nicole. We started this journey together when she just turned two years. It was only her and me in the foreign country with no assistance. Despite of all the worries I had, she turned out to be my reason to continue even when I could not. Every time I get her from the crèche and looked at her sweet smile and sparkling eyes energized me and made me forget all the disappointments and struggles for the day. You are my PhD baby, and we made it sweetheart. For ACVV crèche staff members, Yolanda, Collette, Judy, Aldine, Johanne, Suzan am so grateful for taking care of my daughter with so much passion and love, making it easy for me to focus on my school.

I wish I could mention each one of you, who made this work possible, but all the contribution despite of its magnitude is very much appreciated, and God’s blessings will follow your way.

To My Daughter Nicole-Mikayla Remy Mollel

Hold on to Instruction; do not let it go; guard it well, for it is your life.

Proverbs 4:13

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List of Abbreviations

CI	Confidence Interval
CIP	Census of Industrial Production
CTI	Confederation of Tanzania Industries
D&S	Demand and Supply
ETP	Education and Training Policy
FGD	Focus Group Discussion
HRD	Human Resource Development
IDR	Industrial Development Report
IIDS	Integrated Industrial Development Strategy
ISIC	International Standard Industrial Classification
LDC	Least Developed Countries
M&E	Monitoring and Evaluation
MoEST	Ministry of Education, Science and Technology
MVA	Manufacturing Value Added
PLS	Partial Least Square
PSM	Propensity Score Match
SDL	Skills and Development Levy
SEM	Structural Equation Model
SIDP	Sustainable Industrial Development Policy
SSA	Sub-Saharan Africa
TDV	Tanzania Development Vision
TESS	Tanzania Enterprise Skills Survey
TICR	Tanzania Industrial Competitiveness Report
UNIDO	United Nation Industrial Development Organization
URT	United Republic of Tanzania
VETA	Vocational Education and Training Authority
VET	Vocational Education and Training

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CHAPTER 1: BACKGROUND AND INTRODUCTION

1.1 Introduction

Firms have a number of resources that determine their performance; broadly categorized under capital resources, human resources and organization resources (Thang, Quang, & Buyens, 2010). When discussing resource-based theory, Barney (1991) said that maintaining the uniqueness of firm's resources over its rivals is the best strategy a firm can adopt to ensure a sustainable competitive position. Investing in human resources continues to attract attention for most investors due to its ability to create uniqueness in the firm's operations. The investment in human capital creates a valuable, imperfectly imitable, rare and non-substitutable resource that the firm needs (Barney, 1991; Wright & McMahan, 1992). From such investment, firms gain added advantage over their competitors from exclusive individual and organization capabilities they are able to retain (Aragón-Sánchez, Barba-Aragón, & Sanz-Valle, 2003; Úbeda García, 2005). Becker (1994) pointed out the advantage of investing in human resources because of the long returns: due to its intangible nature, the skills and knowledge gained can neither be easily destroyed nor separated from its owner.

Numerous theoretical and empirical literature articulate that, among the investments performed on human capital, education and training exclusively contribute to firms' outcomes (Ballot, Fakhfakh, & Taymaz, 2006; Becker, 1994). Nonetheless, the importance of training surpasses even the benefits obtained from basic education, particularly for work-related duties (Becker, 1994). Usually, the investment in employee training is mostly undertaken with respect to the firm's needs and priorities at a particular time in order to maximize the expected output; the effect is then more visible to the firm compared to formal education which is more general (Becker, 1994; Tzannatos & Johnes, 1997; Ballot *et al.*, 2006; De Grip & Sauermann, 2012). This study establishes the relationship of training and firm performance while considering different moderators and mediators relating to firms' internal factors, external factors and willingness to change. Evaluating the presence, magnitude and significance of the expected responses within the process towards the final output is necessary for making informed conclusions on the total effect, as is done in this study (Aragón-Sánchez *et al.*, 2003; Preacher, Rucker & Hayes, 2007). From there, the effectiveness of the conducted training can be modelled considering possible circumstances, within and outside the firm (Chi, Wu, & Lin, 2008).

The performance evaluation process is not only intended to measure the return on investment undertaken, but also to understand if it serves the purpose of strengthening the country's human capital as a strategy to achieve industrial economies, which is the long-term goal. Regardless of the major interest on the long-term impact, it is logical for policy makers to observe the immediate contribution of training at the firm level. The evidence obtained from the analysis could provide insights to policy makers on the progress achieved from the development budgets implemented in the skills development agenda. The human capital stakeholders in general will gain knowledge on how training could affect firm performance on different dimensions, and set their strategies accordingly for higher returns.

1.2 Background

Structural change of the economy is used as a fundamental element in least developed countries (LDCs) to widen the employment base, enhance value addition and eventually achieve economic development (UNIDO, 2013). However, the pace of transforming the economy is not the same for all countries, even though they might start in the same economy level. For example, the UNIDO (2016) report presented the situation between South Korea and Ghana who started at an almost similar economic level in the 1960s. By the 2000s, South Korea had managed to transform its economy, advanced its manufacturing sector, and reported a larger share in the economy compared to the agriculture sector. Around that time, no significant structural changes had occurred in Ghana's economy and the agriculture sector continued to play a larger role than manufacturing. It was, however, argued that, although there might be delays, transitioning the structure of the economy is still possible, especially for developing agrarian economies (UNIDO, 2013).

Multiple developing economies such as China, Thailand, Malaysia, Indonesia and the Republic of Korea have successfully transitioned (UNIDO, 2016). However, the concern remains that most developing economies, in this case narrowed to Sub-Saharan African (SSA) countries, have a "threshold level" of the required industrial drivers, supporting institutional environment and policies to leverage the power of structural transition process (Andreoni, 2011). For example, countries such as Tanzania, an early industrializing economy, which refer to those countries that are in the early stages of structurally transforming their economies to industrial base, has isolated the industrial capabilities taxonomy which shows the set of complementary drivers which firms should own in order to successfully compete in the market with respect to their sector specifics (United Republic of Tanzania, 2015). Such

drivers include production capacity (investment in machines, equipment and other capital goods), production capabilities (individual and organizational skills, experience and productive knowledge), technology capabilities (generating, absorbing and managing technology changes), and innovation capabilities (innovating across different organizational and technological functions). Although all these drivers are important at one point in the production process, production capabilities (human capital) are the key driver at the early stages of structural change in order for firms to build a base of creating sustainable competitiveness (Huselid, 1995; Barro (2001); Ng & Siu, 2004; Thang & Quang, 2011; UNIDO, 2013, 2016). The strategy of investing in human capital has been used by different transitioned economies which foster their development process through investing in their comparable resource; people (Becker, 1994). A number of theories in the human resource management and strategic management fields, including the resource-based and human capital theories, have supported investment in human capital.

1.3 Theoretical Review and existing gap

There is lack of theories explicitly focusing on the area of training, yet only few explain the contribution of human resource development in the firm's performance (Thang et al, 2010). The proposed study, intends to build its foundation from the dominant theories in the field, establishing on the arguments presented in respect to human capital and its effects to the firm performance. There are two dominant theories that is Resource based theory as presented in the seminal work of Barney (1991) and the human capital theory from Becker (1994) seminal work. These theories will be used as lens of analyzing the effect of training on firm performance in this study.

In the human capital theory, Becker (1994) clearly pointed out that, human capital directly influences the production process of the firm from the set of skills obtained which increase worker's productivity in the tasks involved. In the theory, Becker mentioned different sources of human capital including education, training and innate ability which according to Blundell et al. (1999), there exist a strong complementarity among the three components. In training, Becker (1994) explained that the investment can be through general or specific training depending on the existing need. According to the theory, firms will prefer investing on specific training since the gained benefits are higher than general trainings. The assumption of perfect labour mobility, where the labour's return match with the respective marginal product, was used by Becker to build a case on the minimal returns firm will obtain when

investing in general trainings. This was based on the fact that, the skills and knowledge obtained in general trainings can also be of value to other firms which influence labour mobility to bargain for greener pastures matching with their after-training marginal product in a case where their original employers cannot offer. However, imperfect competition theories criticize Becker's assumption where a concern was raised on the predetermined and controlled wage system which do not give much flexibility for labors to bargain for higher wages across the industry (Acemoglu and Pischke, 1999). Several empirical literatures have tested the imperfection of labour mobility through analyzing the returns which firms can still obtain when they invest on general trainings, despite of changes occurring in labour's marginal productivity, and the results were in favor of the firms (Dearden et al, 2006; Ballot et al, 2006; Konings et al, 2010). Interestingly, workers become more committed on learning when receiving general trainings since they understand that the skills/knowledge obtained can be of value to other firms in the future (Konings, 2010).

Together with other objectives, multiple scholars have been concerned with the firm sustainable competitive advantage and several theoretical studies have been conducted to explore the respective competitiveness attainment goal (Thang et al. 2010; Wright and McMahan, 1992). Resource based theory was presented by Barney (1991) when addressing the gaps existing in environmental models of competitive advantage. Barney explains that, these models focused on external analysis and did not consider the internal side of the firm by assuming homogeneity between firms. For Barney (1991), this was underestimating the role of internal side of the firm. Through the resource – based model, he described a number of resources which firms can strategically use to attain sustained competitive advantage; human capital resources, physical capital resources and organizational capital resources. He defined sustainable competitive advantage as implementing a strategy of creating value which firm implement, not applied by any current or potential competitor, and the benefits cannot be duplicated even if other firms try to. Barney mentioned that, when the resources are potentially heterogeneous and immobile among firms that can be the source of competitive advantage when efficiently and effectively exploited. The mentioned characteristics of the respective resources are rare, imperfectly imitable, valuable, and no strategically equivalent substitutes. Among the three categories of resources presented, Barney argued that, human resource when effectively developed through different HRM practices, they can imitate the mentioned characteristics and increase firm's competitiveness. In his seminal work, Huseild (1995) concur to that through the presented argument that, firm's human resource are

important considerations in executing its strategic business plan and when developed through practices like training, when aligning with the strategy in place, firms can acquire sustainable competitive advantage. Although the importance of training to the firm is supported by the discussed theories, the methodology of evaluating its effect to prove its significance still remains debatable.

Back in the 1950s, Kirkpatrick introduced a four-hierarchy model to guide the training evaluation process which formed the basis for most of the recent theoretical and empirical studies (Kirkpatrick & Kirkpatrick, 1975). The model proposed four level of training evaluation criteria: reaction, learning, behaviour and results (Kirkpatrick, 1959). While the reaction level derives the trainees' satisfaction from the training program, learning level concentrate on the extent of change occurred in attitudes, knowledge and skills. Behaviour level is concerned with extent of change in behaviour while results level intends to measure cost versus benefits to derive training efficiency from costs incurred. Holton (1999) raised a concern on the model that despite been accepted as a standard model in the field, it is rarely implemented in organizations because casual linkage among proposed levels is not clear. The elements in the model are not full specified and their relationship is not well explained. Other researchers in the field also raised their concern on the methodological guidance to follow when adopting the hierarchy; outcomes measurement to apply with respect to the purpose or type of evaluation is not clearly prescribed (Kraiger, McLinden and Casper, 2004).

Due to several conceptual ambiguities on the Kirkpatrick hierarchy, a number of researchers extend the model with some modifications to accommodate the concerns. Hamblin (1974) added a fifth level in Kirkpatrick hierarchy, dividing the organizational performance and ultimate value to the business. It went on with Philips (1995) work who proposed a fifth level when focusing on modifying third and fourth levels of Kirkpatrick model. He labelled the post-learning levels as 'job application' (level 3), 'business impact' (level 4) and 'return on investment (ROI)' (level 5). From his review of different models under "impact of training evaluation" Holton (1996) also developed a theoretical framework with an argument that, if the intervening variables (between the first and final levels) are not well measured, there is a possibility of wrong conclusions on the quality of training program. For Holton, the complex system which influences the training outcomes should be considered and measured for accurate evaluation. From that stand, Holton presented a model where three measures of outcomes: learning, individual performance and organizational performance.

Borrowing from the Kirkpatrick training evaluation basics, and agreeing with the arguments put forward by Holton on contemplating the role of intervening variables on the process, this study evaluation model obtain its basics from the conceptual model presented recently by Tharenou, Saks and Moore (2007). Their model accommodates different concerns raised by previous theoretical researchers on giving out clear measurements of the elements presented, having clear casual linkages, and profoundly addressing the intervening variables matter by displaying the mediation role they perform. As outlined in their work, Tharenou et al (2007) proposed measurements for different elements in their model for guideline purposes. For HR outcomes, the measures proposed were employee attitudes, behaviour, human capital (skills and competencies) and general outcomes (such as absenteeism, retention). For organizational performance outcome; productivity, sales, quality, general performance such as customer satisfaction, and perceptual measures from manager's subjective performance perceptions were proposed. The financial outcomes elements were proposed to be derived from profit, return on investment (ROI), return on equity (ROE), return on asset (ROA), general financial outcomes like cash flow, liquidity, assets, and also perceptual measures from subjective manager's perceptions.

The model became a guide for this study on how to measure the non-financial performance output and financial performance output. Moreover, this study adopted the human capital mediation variable by including employees' skills as the key mediation variable in Chapter 4. Nevertheless, the 'ideal training evaluation model' that captures multiple effect angles and the respective flow of the effect, taking into account different scenarios that moderate the mediation was yet to be explored by Tharenou et al (2007) presented model. This includes different factors which extend the training evaluation model while viewing training effectiveness in different perspective. While training effectiveness has been viewed from the firm performance so far, this study split how it should be viewed in two perspectives. Training effectiveness as a process has to be viewed from the employees' change level. If the intended changes on employees' skills have occurred, it can be said that training process was effective. The other part is viewing it as the contributor towards the firm reported performance. This took into account that, there are other factors which determine the extent of the effect from the training. Training can be effective but for change to occur the key stakeholders who have the mandates have to allow that. Also the external factors is another key issue determining to what extend will the effect of training be revealed on the firm performance regardless of the support given by the top management. After combining all the

findings, the study managed to come up with the suggested ‘training evaluation model’ as presented and discussed in Chapter 6. The analysis towards the model highly benefited from the theoretical works of Lewin’s as presented by Burnes (2004), Noe & Colquitt (2002) and PROCESS models as presented by Hayes (2009; 2013; 2015; 2018).

1.4 Empirical review and existing gap

Several authors have reviewed literature on training and its effects on the firm performance and commenting on the existing agreements and disagreements in the field from different angles. In a recent literature review of studies which included 66 studies between 1991 to 2007, Thang, Quang and Buyens (2010) confer that, the relationship between training and firm performance depends on the sector involved, performance measures employed, the reliability of data (standard versus subjective measures) and country specific effects. In the respective review some controversy was observed where a range of return measures have been used in different articles to examine the effect of training on firm performance with approximately 94% of the reviewed studies using firm financial performance measures (among them some studies used both financial and non-financial measures). Another argument was fetched from the reliability of the results from the data used during the analysis, where others had to rely on subjective measures due to low questionnaire response or lack of reliable data for estimation. The scarcity of studies in developing countries was also presented in their study despite the importance of country specific studies due to cross country heterogeneity and need for localised findings to inform local (country) specific policies. It is also important to note that, although there are studies which include different countries in the sample (developed and developing), there is a possibility of aggregation bias which can be addressed in country specific study.

Relationship of training and firm performance literature was and is still growing tremendously with multiple contributions made from different researchers. Following the theoretical frameworks which has been developed along, applications have been made in various empirical works. Amid those empirical studies, employee return through wages and firm return continue to be the major return evaluation phases which have been extensively researched so far. Around 1990s, there has been a number of seminal works done in the field; evaluating the effect of training on wages, as a measure of return (Lynch, 1992; Bartel, 1995;

Parent, 1999; Acemoglu and Pischke, 1999), the effect of training on firm's performance (Arthur, 1994; Bartel, 1994; Huseild, 1995; Black and Lynch, 1996) and others analysed the training effect for both workers and the firm to establish the share of rent among them (Bishop, 1994; Blundell et al, 1999). These literatures created a solid base for the ongoing empirical works in the respective areas and the ideas they presented qualify them to be mentioned as unique contributors (sources) referring to the global main path methodology adopted by Liu et al (2012) in their review work. Still, different empirical researcher followed different paths with respect to individual research purpose. The existing dynamism is what makes the field interesting and continue to be active.

After the extensive empirical review (see the summary in Appendix K), this study intends to address multiple gaps, and the one cross cutting in all of the three sub-topics is geographical concentration as briefly explained below:

Thang et al (2010) explained how multiple studies conducted on the topic were country specific, majority conducted in developed countries and the biasness it might have on the results due to country specific measures. Moreover, the review reveal that numerous studies have been done in America, Europe and Asia (Backman, 2014; Percival, Cozzarin and Formanek, 2013; Grip et al, 2012; Niazi, 2011; Nikandrou et al, 2008; Ballot et al, 2006; Dearden et al, 2006; Barret and O'Connel, 2001), and few directed in transitional economies like China, Taiwan, Vietnam and others (Thang and Quang, 2011; Chi et al, 2008; Tzannatos and Johnsen, 1997). However, only handful works have been done in developing countries particularly in Africa where the topic seems to be more of interest lately due to the development policies in place, particularly, investing in human capital as a way to industrialization. Majority of the conducted studies, example, a work of Davas and Palmer, 2014 in Ghana which reported that the trainings done did not lead to firm productivity as expected since they were ineffective and inefficient, still leave questions for other countries' policy makers if their training instrument works as expected. Berge et al, (2012) tried to do an experimental study on training effectiveness in Tanzania but did not do much on the effect of training, rather on the mode of training implementation. One work which focused on training and education impact across different sectors using panel data was done by Kahyarara and Teal, (2007) in Tanzania, however, their attempt to establish the impact of training and education was done in earnings and not on firm's return. This shows much empirical work is still needed for developing countries to come up with guides and suggestive evidence to the training stakeholders when they evaluate and review their respective policies.

Other specific empirical gaps addressed in this study include:

- The training effect moderated by upper-level education on financial and non-financial performance return measures to realize the difference on their response to training at same point in time. This intends to investigate the possibility that, the effect of training can first be observed in the firm productivity before be reflected in the firm profit. However, the education level chosen targeted to establish the importance of countries to invest in upper-level education also since the focus has been much on primary education level. The gap has been discussed and addressed in details in Chapter 3 of this thesis.

- The mediation analysis has been given less attention in the existing literature. More studies considered moderating factors (Konings and Vanormelingen, 2015; Schonewille, 2001; Storey, 2002) compared to those who considered mediating factors (Niazi, 2011). Nonetheless, few have addressed the moderated mediation situation (Chi, Wu and Lin, 2008). This study analyses the parallel moderated mediation model to examine the training effectiveness as a process and then establish its role on the productivity measure. Moderating the model by the ‘firm’ training needs towards the change on employees’ skills has not been done in previous studies. This will determine if the supplied training, decided by the firm, match the demand of the employees by observing the skills level before and after training. The gap has been discussed and addressed in details in Chapter 4 of this thesis.

- Exploring more on the causes of the variation of training effects across firms; this seems inconclusive from the studies done since firms are unique in different context particularly country specific. Even within the country, every firm has a different setting internally and externally, that is, how they interact with external environment. For example, Tanzania as most of the developing countries, majority of firms fall under small and medium enterprises (SMEs) who majority have less absorption capacity to change due to their technology level, managerial capacities and so on. Still, it is necessary to understand which factors are key for developing countries environment, their complementing and substituting character. The gap has been discussed and addressed in details in Chapter 5 of this thesis.

1.5 Definition of training

There exist different views among researchers when defining training for the purpose of deriving its effect to a firm. For most studies, there has been a distinction between formal education and post-school qualifications of which the latter is more linked to the courses which one attends to obtain knowledge and skills for specific activity or task (Bundell, Dearben and Sianes, 1999; Storey, 2002; Kahyarara et al, 2007). In contrast, Moy, in the NCVET (2001) report ch. 3, presented a different point of view and mention that training definition is broader, including all forms of skill formation activities relevant to firm's operations; formal and informal, on-site and off-site, together with formal education. Other literature describe training in more general form, as one of the sources of human capital which contributes on economic development and long term growth of the firm (Konings et al, 2015). However, training as "a systematic process to acquire knowledge, skills and abilities needed to carry out a certain job or activity" seems to be a common adopted definition by multiple studies (Bartel, 1994; Black and Lynch, 1996; Tharenou, Sakz and Moore, 2007; Niazi, 2011). In the context of our study we define training as all those formal teachings which the worker received, either from internal or external trainer, on the job or off the job, with the intention of acquiring specific skills and knowledge to advance their capacity and capabilities in undertaking a particular task (Black & Lynch, 1996; Tharenou et al, 2007). This is aligned with the expected contribution intended to be made by this study where training is expected to bring a particular effect to the firm through the human capital generated, regardless of its nature. Appendix L shows how training has been measured for the purpose of this study.

1.6 Statement and significance of the research problem

The topic of the effect of training on firms' performance continues to show its relevance in the academic field due to multiple theoretical and empirical studies that have been done so far. A number of empirical works have applied different suggested models and their findings remain contradictory due to different frameworks employed in their studies (Conti, 2005; Gonchkar, 2012; Kok, 2000; Tharenou *et al.*, 2007). The existing heterogeneity in political, resource, technological and institutional arenas across countries points to the need for context-specific policy-driven studies.

On the macro level, different studies have been done reflecting the role of human capital on facilitating economic growth (Barro, 2001). Although Barro (2001) studied the role of education on economic growth, this study focuses on training efforts in micro level growth. Among the main goals of devoting significant efforts towards human capital development is achieving a significant positive relationship between skill development and enterprise performance. The efforts which the government and private sector are making with regard to investing in human capital development practices, particularly training, are expected to result in increased productivity to firms and achieve sustainable competitiveness in the long run. However, the evidence collected from different studies explaining the effect of training on a firm performance reaches different conclusions (Thang *et al.*, 2010; Tharenou *et al.*, 2007).

From the findings, some of the studies remain neutral on their conclusions, that although training was delivered to the workers, affirmation that firms get their share of returns remains inconclusive. A study done in Ghana by Darvas and Palmer (2014) found that the training delivered was ineffective and inefficient with respect to the needs, and so the possibility of realizing the hoped for effect on the firm's productivity was minor. Tharenou *et al.* (2007) in their review of literature found that the majority of the studies reflected either a significant negative relationship between training and the firm's performance, or a non-significant relationship between the two variables, and where there was a significant positive relationship, then the impact was minor. However, other studies report a significant positive relationship between training and firm performance (Thang *et al.*, 2010).

The existing differences in the related studies' findings have served as the basis for this study. It remains of interest for one to understand whether the existing disparities in the findings is due to contextual issues like country specific factors, nature of trainings, the match of skills demand and supply, the qualities of the trainees; or is methodological issue. The later concern focuses on the reported conclusions, drawing from those studies which reported negative effect from training on firm performance. The concern is whether the respective results reflected the ineffectiveness of conducted trainings, or whether there was other factors that influenced the reported training effect being positive or negative. Does it depend with the adopted training evaluation model?

1.7 Research questions

This study intends to answer this key question: what is the relationship between conducted employee training and the respective firm's performance? Under this main question are the following sub-questions:

- How can the effectiveness of training be determined?
- Under what circumstances does training become effective within the firm?
- What is the perception of firm management and employees on the effectiveness of training taking into consideration other factors affecting the firm's performance?

These empirical questions will be addressed in the current study to obtain findings that guide the conceptualization of a training effectiveness model in the context of early industrializing economies.

1.8 Research objectives

The main objective of this proposed study is to establish the relationship between training and firms' performance in Tanzania. Specifically, the study intends to:

- i) Analyse the quantum and direction of the training effect on firm performance using productivity and profit return measures;
- ii) Establish the effectiveness of conducted training on addressing the skills gaps, and its respective effect on the firm's productivity; and
- iii) Investigate the factors contributing to training effect variations on different firms, particularly internal, external and willingness to change,

1.9 Limitations of the study

This study employed both secondary and primary data. The Tanzania Enterprise Skills Survey (TESS) dataset by the World Bank enterprise survey presented the firm data in cross-sectional format, which became a challenge when the research needed to accommodate the unobserved time-invariant effect. The issue of endogeneity is very relevant in cross-section analysis, and can result in biased estimates. A number of unobservable factors could explain the possible correlation between the training variable and the error term such as technology changes, economies of scale, and firm context to mention a few. The possible significant causal relationship is hardly addressed using the cross-section data in this study. The studies

that establish a relationship among variables require a time-factor in the dataset to obtain findings that are more convincing. However, the findings of this study still provide enormously reliable inputs in the body of knowledge, since the analysis accommodates unobservable factors using interview data in part of the analyses, multiple firm return measures that differ on effect timing reaction, and performance of endogeneity tests to reduce the doubt of presented results. Nevertheless, future studies should consider the panel dataset to establish conclusions that are more viable.

Single measurement of the training variable is another limitation, particularly when addressing objectives one and two where secondary data was used. When one measurement is used, it reduces the analysis flexibility where the training effect could be viewed from different angles. During the fieldwork of this study, a number of other training measurements were explored, including training frequency, mode of training, training hours, training expenditure, and others. When similar information were also available in the secondary data, it could have given a variety of results with more details for reliable conclusions. Hence, the findings obtained from using training intensity alone, only provide suggestive evidence of training contribution on firm performance in Tanzania, but more could be performed to obtain richer information. This is an opportunity for further studies.

1.10 The structure of the thesis

This thesis is divided into seven chapters. The first chapter introduces the research problem, the background of the study, research objectives and limitations of the study. Chapter 2 provides an overview of Tanzanian human capital development and industrial performance, Chapter 3 looks at the relationship between employee training and firm performance measures, while in Chapter 4 the process model was employed to establish training effectiveness moderated by training needs. In Chapter 5 a qualitative analysis was conducted to investigate the factors leading to training effect variation across firms, followed by the conceptualized training effectiveness model consolidating all the study findings in Chapter 6. In Chapter 7, the overall conclusion is presented together with areas for future research.

CHAPTER 2: OVERVIEW OF TANZANIAN HUMAN CAPITAL DEVELOPMENT AND INDUSTRIAL PERFORMANCE

2.1 Introduction

Human resources is among the key factors for achieving economic development in any country (United Republic of Tanzania, 1996). The existing human capital demand for operationalization of economic sectors requires the government to strategize and invest in human resource development (HRD) channels, particularly training due to its promising return. The World Bank Country Director in Tanzania conforms to that when quoted saying *“Tanzania needs to increase investments in infrastructure and human capital to further unlock its growth potential while enabling the private sector to create more jobs”* (World Bank, 2016). The investment is meant to develop skills while responding to the needs in the labour market. As defined by Darvas and Palmer (2014), skills development encompasses foundational skills (literacy, numeracy), soft skills, and technical and vocational skills. Although the process of developing skills occurs throughout from formal education, family and community, internet, work experience and others, training has special emphasis due to its ability to accommodate the highlighted deficiency in the short run (Ng & Siu, 2004).

Despite the continuing efforts, which can be observed from the recorded achievements, Tanzania is still facing challenges on its workforce. For instance, in the country’s Education and Training Policy of 2014, the URT has reported that the number of people enrolling in government training centres has grown from 4,641 in the year 2000/01 to 145,511 in the year 2012/13. However, the President’s Office Planning Commission (POPC) of Tanzania has been quoted in Mateng’e’s, (2014) study, pp 693. *“Only three per cent of the Tanzanian working population could be classified as high-skilled, with the majority (84 per cent) of the working population being low skilled”*, relating the situation to the existing deficiency of a competent workforce in the productive sectors. This implies that the country will continue struggling to grow its economy if enormous efforts are not consistently undertaken to develop its human resources. Often, the national development policies reflect the existing priority areas and commitment towards the country’s goals.

2.2 Development policies: the position of human resources

Recognizing the importance of skills development for the competitiveness of their economies through enterprises performance, governments in developing countries considered multiple strategic moves to address the situations through regional and country specific policies. Referring to Tanzania Development Vision (TDV) 2025, the country aims at being semi-industrialized by 2025 (United Republic of Tanzania, 2000). Achieving a well-educated and learning society is among the five main attributes that the TDV 2025 is built on. Through that, the government aims to equip the people with the requisite knowledge and skills to be able to solve society's problems and attain competitiveness at regional and global levels. This was also reflected in the country's Integrated Industrial Development Strategy (IIDS) 2025 when discussing the country's mission for attaining the required sector workforce. The government intends to *"add value to labour through technical trainings and incentives"* which tallies to the TDV 2025's discussed attribute (United Republic of Tanzania, 2011: chapter 3: 17). Aligning to its five year development plan (FYDP) 2016/17 to 2020/21, the country has recently approved the five year Education Sector Development Plan (ESDP) 2016/17 to 2020/21 (United Republic of Tanzania, 2018). Although the private sector plays its role to achieve the country's vision on human capital development, the government, through its ministries and agencies, has been taking the lead by continuously responding to the need to ensure quality demand-driven education and training for its labour force through specific policies.

2.3 Training policy and progress in implementation

Recently the country launched the Education and Training Policy ETP (2014) as a way of implementing the action plans displayed under the TDV 2025 and IIDS 2025 strategies. Before this policy came into action, there were other policies guiding the training agenda. However, any industrial policy has its cycle, which commonly starts with industrial diagnosis, defining strategic priorities, designing the policy package, implementing the policy instruments through different policy stakeholders and later monitoring and evaluation of policy impact. The last point is very important since it is meant to provide inputs for tracking the progress, and possibly reviewing the policies. This cycle has been observed as stipulated by the United Republic of Tanzania (2014) in the respective policy document. The respective document presented that the ETP replaced four of the existed policies, that is, Education and Training Policy, the Technical Education and Training Policy, National Policy for Higher

Education, and the Policy of Information and Communication Technology for Primary Education.

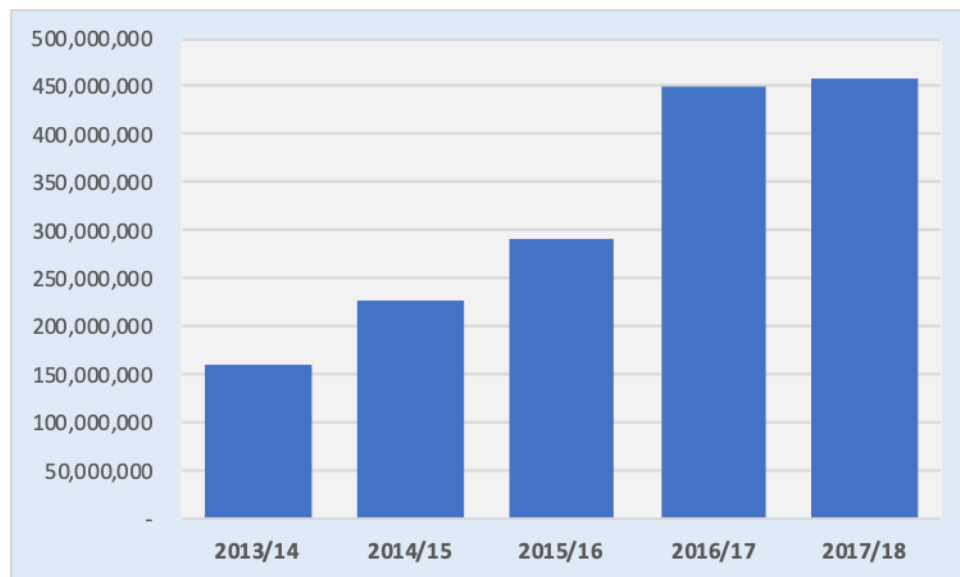
2.3.1 Training providers and government support

A number of players facilitate training in Tanzania as they implement the government vision, strategies and policies. According to Redecker, Wihstutz, and Mwinuka (2000), the training providers include private institutions, mission and trade schools, government training institutions and the institution owned and run by the Vocational Education and Training Authority (VETA). In the VETA 1994 Act, the mandates of the latter institution were clearly presented (United Republic of Tanzania, 1994). Established under the direct supervision of the government through its ministries the objectives of the institution are:

- Providing vocational training opportunities;
- Establishing the system for guiding the vocational education and training intending to meet formal and informal sector needs;
- Satisfying the demands of the labour market and ensuring the system is demand based and cost effective; and
- Gradually decentralizing planning and implementation authority with the intention of expanding its reach context-wise.

Among other institutions, the government of Tanzania mostly supports the training initiatives through VETA. The government reflects its commitment and efforts to implement the education and training related policies through the Ministry of Education, Science and Technology (MoEST) budget. The budget is set to cover three major parts of the country's education system: formal education, professional training, and adult and non-formal education (United Republic of Tanzania, 2018). This can be well observed through the development budget trend for the recent five years (see Figure 2-1 below).

Figure 2-1: Tanzania Ministry of Education, Science and Technology (MoEST) Budget in USD, 2013–2017



Source: MOEST 2013/14 – 2017/18 Budget Reports, (www.moe.go.tz)

After the higher education department, the tertiary education and training department is among those receiving a substantial portion of the respective ministry development fund annually through VETA institution. This is the major government tertiary institution in the country with major determination and measures in place to ensure equity and access to education and training services.

2.3.2 *Support to training institutions – monitored progress*

While implementing its mission of ensuring the provision of quality vocational education and training (VET) that meets labour market needs, the authority has achieved a number of successes. In VETA's 2015 report, it was observed that the number of trainee enrolments increased from 77,051 in 2005 to 189,687. The authority reported the increase of vocational teachers to ensure the quality of services provided, from 276 in 2011/12 to 939 in 2013/14 for certificate courses and from 34 in 2011/12 to 89 in 2013/14 for diploma courses. When observing the link of the provided trainings and the industry, the tracer study done by VETA in 2010 indicates that 66.1% of their graduates found employment, both waged and self-employment (VETA, 2015). The manufacturing sector is among the economy sectors that highly accommodate graduates. The authority is not only meeting the industry through its graduates, but also VETA reported that it provided on-the-job training through their skills enhancement programs. For instance, between the years 2012 to 2015, it managed to reach 65 companies and about 2,000 employees were trained. In addition, through their wide range training programs, VETA reported that it reached a total of 15,000 people in ten years

coming from different categories, that is, informal sector, unemployed and under-employed. It is of concern whether these efforts are reflected in firms' performances. The employers do not freely benefit from the trained labour they receive, they contribute through the skills and development levy (SDL) which is 4.5% of employees' emoluments paid monthly (Tanzania Revenue Authority, 2019). The concern about the effectiveness of these training programs is thus crucial to a number of stakeholders.

2.3.3 Absorption of labour in the Tanzania industry sector

The United Republic of Tanzania (2015) reports a shift in employment structure in the economy where the absorption of labour in the industry sector has increased by 3.4% from 2001 to 2014. The Census of Industrial Production (CIP) report pointed out that 87.5% of the industrial sector¹ employment are from the manufacturing sub-sector (United Republic of Tanzania, 2016). The sub-sector has been reported as the second largest employer in the country after the service sector when the agriculture sector is excluded (United Republic of Tanzania, 2015). Out of 264, 223 employment recorded in the CIP, 87.5 percent were under manufacturing sector, (United Republic of Tanzania, 2016). The number of establishments under manufacturing sub-sector is also significant when comparing to other sub-sectors in the economy. This was witnessed in the CIP report where among 49,243 industrial establishments (large and small) covered, manufacturing sub-sector had the largest number of establishments 48,474, approximately 98.4 percent, (United Republic of Tanzania, 2016). Majority of these establishments are small sized, with less than four employees. The VETA 2015 report mentioned that the majority of their graduates are also absorbed under the manufacturing sector.

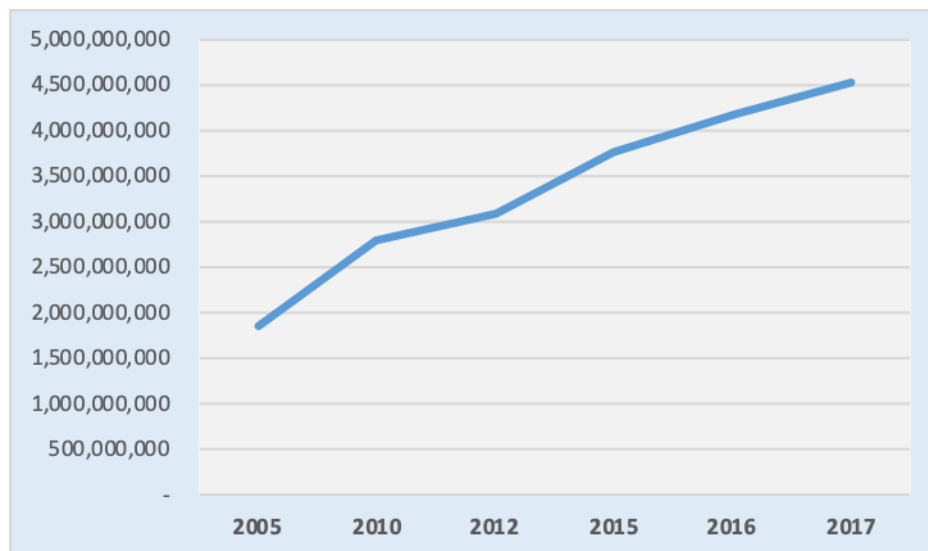
In the year 2013, the manufacturing sub-sector contributed 59.7% of the total industrial sector's value added, which portrays its particular importance in the country's economy, especially from the industry sector (United Republic of Tanzania, 2016). The sector performance trend is then interesting to observe, relating it to the increasing budget in human resource development from the government budget portrayed in Figure 2-1.

¹ The industrial sector for this report includes four sub-sectors: Mining and Quarrying; Manufacturing; Electricity, gas, steam and air conditioning supply; and Water supply, sewerage, waste management and remediation activities.

2.4 Industry development

Different empirical studies agree that there is a positive relationship between human capital and firm performance (Dearden, Reed, & van Reenen, 2006; Konings & Vanormelingen, 2015; Thang & Quang, 2011). Coming from a centralized system which has undergone structural reforms, Tanzania's economy has made significant improvements towards the transition process, from an agricultural-based to an industrial economy. There are different measures for determining training return on firm performance. For the manufacturing sector, value added is among the common measures. The Tanzania Industrial Competitiveness Report (TICR) presented the country's industrial performance trend using the manufacturing value added (MVA), (United Republic of Tanzania, 2015). It has been reported that the growth of MVA has slowed recently from the average of 8.96% in 2005–2010 to 5.84% in 2010–2013. The recent data showed that the country has managed to increase its absolute MVA from 1,859 in 2005 to 4,519 (in million USD) in 2017 as seen in Figure 2-2 below.

Figure 2-2: Manufacturing Value Added (constant 2010 USD)



Source: World Development Indicators

Therefore, the increasing investment in human resource development through training among the others human capital sources, and the observed increasing trend in the manufacturing firms performance as a representative of other firms, necessitate the need to find out the relationship between the performance witnessed and training attended.

In summary, this study intends to evaluate the efforts made so far to appreciate the achievements attained and realize areas for improvement as an input to the monitoring and evaluation (M&E) stage through impact evaluation. This begins from analysing the extent of the training effect on firms' performance using the selected measures, thoroughly addressed in Chapter 3.

CHAPTER 3: EFFECT OF TRAINING ON FIRM PERFORMANCE: THE INTERACTION EFFECT OF EDUCATION

3.1 Introduction

In the early stages of economic structural change, countries cannot escape developing their human capital to maximize their firm performances (Becker, 1994; UNIDO, 2013). Despite existing multiple strategies to transform the economy, human capital is seen as the key driver at the early stages in order for firms to build a base for creating sustainable competitiveness (Barney, 1991; Huselid, 1995; Ng & Siu, 2004; Thang & Quang, 2011; UNIDO, 2016). The investment in human capital includes among other factors individual health, family factors, basic education and job training (Becker, 1994). Although there are multiple sources, several authors have emphasized the strength of training on responding to the labour market demand (Cowling, 2009; Huselid, 1995; Kahyarara & Teal, 2008) through addressing specific skills needs (Tzannatos & Johnes, 1997). It is, however, important to note that not every training yields the positive results expected (Tharenou *et al.*, 2007). Still, among other factors the quality of the trainees is worth considering when the evaluation is done on the outcome of the training attended (Blundell, Dearden, Meghir, & Sianesi, 1999; Colombo & Stanca, 2014; Noe & Colquitt, 2002). This is particularly necessary in LDCs where both education and training are still in the development stage (Darvas & Palmer, 2014; Kahyarara & Teal, 2008).

Globally, there is plenty of literature on the topic of training and firm performance but conclusions differ with respect to environment, training measures used, firm performance measures and analysis techniques employed (Thang *et al.*, 2010; Tharenou *et al.*, 2007). Most of these studies have been done in developed countries and transitioned economies which implies less voice from developing countries (Backman, 2014; Ballot *et al.*, 2006; De Grip & Sauermann, 2012; Dearden *et al.*, 2006; Niazi, 2011; Percival, Cozzarin, & Formanek, 2013). The effect of training practices in developing countries remains a lacuna in the body of knowledge to build independent applicable recommendations in the mentioned context. The existing cross-country heterogeneity and the need for localized findings to inform local, country-specific policies cannot be disregarded despite the existing conclusions from different environments. Using the novel data from Tanzania, the quantum and direction of the training effect on firm performance have been analysed from the point of view of

productivity and profit return measures, with special attention on the context of the firms' employees in terms of education level. The analysis uses systematic regression to portray a vivid role of the moderating variable in the equation.

This chapter argues that the basic labour quality is a vital factor in determining the effect of training on firm performance. It also contends that there is a greater chance for the training effect on non-financial return and financial return measures to differ significantly when observed from the same timeline due to the time transfer effect from productivity to profit (Rucci, Kirn, & Quinn, 1998; Zwick, 2006).

The following section briefly reviews some theoretical and empirical literature of training effect on firms' performance, followed by the methodology section that discusses the model employed in the study, analysis techniques and description of the data used. The results section intensely discusses the existing relationship between training and firm performance when moderated by employees' upper level education intensity. The last section consists of the study conclusions, limitations, and possible areas for further research.

3.2 Literature review

3.2.1 Theoretical review

3.2.1.1 Education and training

When revisiting human capital theory, Becker (1994) mentioned education and training as be the most important investment in developing human capital, with special emphasis on the witnessed return from college and higher learning institutions. According to the author, training mostly occurs on the job in order to fit the new employees in the labour market. It was put forward that investing in the employees who have acquired upper-level education is more rational from a cost-benefit analysis due to the assured employees' capacity. The author did not, however, exclusively analyse how the mentioned upper-level education moderates the relationship of training and firm return, but rather explained the position of each of the two on building strong human capital at different stages, that is, before the job and on the job. This paper builds on Becker's (1994) theoretical work by analysing the firm's return when trainings are extended to a team of employees composed of high school, college and higher institution graduates. It intends to determine the moderating strength of upper-level education on the relationship of training and firms' return.

3.2.1.2 Approach of evaluating training effect

Kirkpatrick's four-level hierarchy model proposed four levels of training evaluation criteria: reaction, learning, behaviour and results (Kirkpatrick & Kirkpatrick, 1975). However, some of the authors raised concerns that despite the model having been accepted as a standard model in the field, it is rarely implemented in organizations since the causal linkage among proposed levels is not clear (Holton, 1996; Yamnill & McLean, 2001). Other researchers in the field also raised concerns about the methodological guidance to follow when adopting the hierarchy (Kraiger, McLinden, & Casper, 2004). Tharenou *et al.* (2007) developed a conceptual model accommodating most of the concerns raised by the previous authors. In their model, they present the measurements of the performance in two stages: organizational and financial context. This enriches the results obtained in training evaluation, and analyses and addresses the limitation of conflicting conclusions on the effect due to the type of performance measure used. The model also shows that the effect of training is first reflected in human capital before being observed on the organizational performance, which is an important point in recognizing the contribution of quality of labour in the process.

3.2.2 Empirical review

The literature on the relationship of training and firm performance is still growing fast with contributions from multiple researchers with different perspectives. These include the seminal works of Bishop (1994), Bartel (1995) and Black and Lynch (1996), and some recent works, for instance the work of Barrett and O'Connell (2001), Ballot *et al.* (2006), Chi, Wu, and Lin (2008), Ng and Siu (2004), and Thang and Quang (2011). They evaluated the effect of training on either labour return (wages), firm return (productivity and profit) or both. In one of the recent literature studies, which included 66 studies between 1991 to 2007, Thang *et al.* (2010) found that the relationship between training and firm performance depends on the sector involved, performance measures employed, the reliability of data (standard versus subjective measures) and country-specific effects. In the review, some controversies on the findings were partly explained by the existing differences on the performance measures used in the analysis. Choosing to employ non-financial measures as opposed to financial measures in the analysis was the option taken by some of the researchers in their studies due to certain limitations, such as minimal responses in the field or lack of formal reliable financial data. Al-Matari, Al-Swidi, and Fadzil (2014) argue that there is no right or wrong firm performance measurement to realize the effect of training. However, the time transfer effect

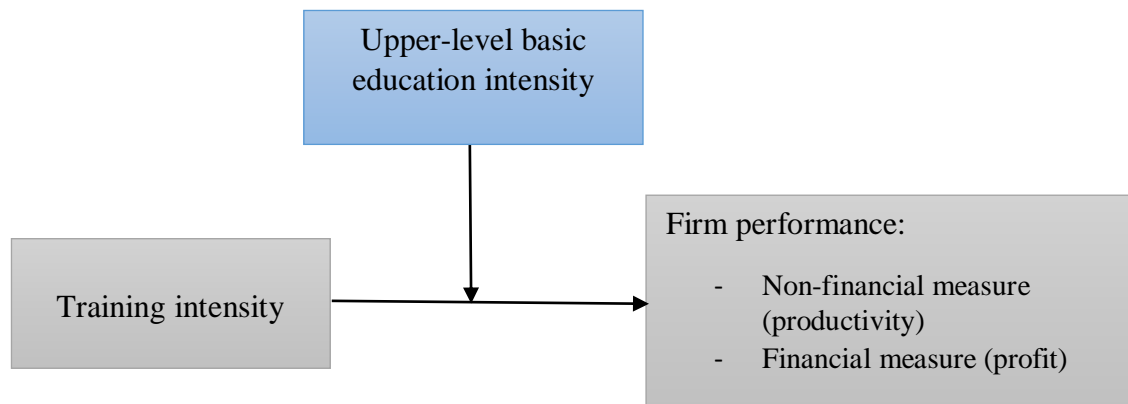
of the imparted knowledge into productivity and hence profit, and the non-separation effect of the reported productivity, are among important factors to be considered when comparing the results (Dearden *et al.*, 2006; Zwick, 2006).

Moreover, few studies on the topic accommodated the role of the upper-level education intensity on the observed training effect. Some of the studies that included the education variable in their studies did not report explicitly the interaction effect of employees' education on the training effect (Black & Lynch, 1996). Kahyarara and Teal (2008) did their research to compare the returns from academic education and training, separately. Blundell *et al.* (1999) did their non-technical review study on the returns from education and training investments to individuals, firms and the economy. Most of the evidence presented in their study focused on either education or training but not on the interaction effect. However, they raised important points: first, that there is a greater possibility for higher educated employees to receive training than for less educated, and second, that training is not for compensating low-level education qualification but rather to add to the stock of human capital which already existed. Since their study was non-technical, their argument is taken further in this study and technically tested.

Based on the theoretical and empirical perspectives discussed, the study focuses on two basic elements of human capital to evaluate the contribution of training on human capital development as complemented by employees' education composition. The moderating model presented in Figure 3-1 conceptualizes the role of basic upper-level education when studying the relationship of training and firm performance using productivity and profit return measures. The hypotheses are then stated as follows:

H1-1: Training has positive effect on firm performance, both non-financial and financial return measures.

H1-2: Training effect on firm performance is higher when the employees' upper-level education intensity moderates the respective relationship.

Figure 3-1: Conceptualized moderation model for training effect on firm performance

The possibility that the combined human capital will make more sense to the firm performance is real, particularly in the context of LDCs where the training sector is still in a developing stage (Darvas & Palmer, 2014). The analysis in this study included only upper-level education intensity and leaves out low-level education intensity in the model since the level of absorbing, interpreting and applying the imparted knowledge and skills from training is more definite for upper-level educated employees than others (Noe & Colquitt, 2002). Nonetheless, future research can choose to look at low-level educated employees' reaction to training imparted.

3.3 Methodology

3.3.1 Model specification

Borrowing modelling ideas from the studies done on the related topic (Barrett & O'Connell, 2001; Black & Lynch, 1996; Dearden *et al.*, 2006; Thang & Quang, 2011) the Cobb-Douglas production function, which represents the relationship between output and inputs, is used as a base for the two models to test the two hypotheses:

$$Q_i = A L_i^\alpha K_i^\beta \quad (3.1)$$

where Q is performance measure, L is effective labour input (weighted by the number of trained workers), K is capital and A is a Hicks-neutral efficiency parameter where other factors influencing productivity will be captured.

Consider L as a sum of untrained (L_u) and trained workers (L_t), and $TRAIN = L_t/L_u$ for training intensity. Performance $Y = (Q/L)$ where Q can be either output or profit. Another

introduced parameter is γ which captures the efficiency of training intensity in the firm. If trained workers perform better than untrained workers, then it is expected that γ will be greater than a unit. Equation 3.1 can then be written as:

$$Y_i = A_i * L_i^\infty (1 + (\gamma - 1) TRAIN_i)^\infty * K_i^\beta \quad (3.2)$$

When logarithms were applied to Equation 3.2 and take into account that $\ln(1+x) = x$, the equation becomes:

$$\ln Y_i = \ln A_i + \beta \ln K_i + \infty \ln L_i + \infty (\gamma - 1) TRAIN_i + \varepsilon_i \quad (3.3)$$

Empirically, there are other factors influencing firm performance apart from capital, labour and training, and not including them in the model could result in omission bias (Black & Lynch, 2001; Zwick, 2006). ‘ ε_i ’ includes factors such as management quality, which is presented by top managers’ years of education and years of experience to accommodate the unobserved heterogeneity which can also be time-inherent (Bruhn, Karlan, & Schoar, 2010; Nikandrou, Apospori, Panayotopoulou, Stavrou, and Papalexandris, 2008; Zwick, 2006). The age of the firm, size and sector are other factors included in the principal model as dummies to minimize selection bias from the firm perspective based on its nature (Bartel, 1995; Chi *et al.*, 2008; Konings & Vanormelingen, 2015). Therefore, accommodating those variables in X, the model that later builds into model 1 becomes:

$$\ln Y_i = \ln A_i + \beta \ln K_i + \infty \ln L_i + \infty (\gamma - 1) TRAIN_i + \S X_i + \varepsilon_i \quad (3.4)$$

Building on the second model, the interacted variable of training intensity and upper-level education intensity variable are added in Equation 3.4 to realize the moderating effect of education intensity on the slope of training and firm performance. After defining the control variables discussed earlier as presented by X in Equation 3.4, the prospective model 2 then becomes:

$$\ln Y_i = \ln A_i + \beta \ln K_i + \infty \ln L_i + \lambda \ln TRAIN_i + \sigma \ln EDUC_i + \mu (\ln EDUC_i * \ln TRAIN_i) + \S \ln TopMEdu_i + \phi \ln TopMExp_i + Sizedummy_i + Sectordummy_i + Agedummy_i + \varepsilon_i \quad (3.5)$$

Note: $\infty (\gamma - 1) = \lambda$

3.3.1.1 Translog production function

The study considered Translog production function as an option for model specification to allow for a more flexible model with fewer restrictions on production and substitution elasticities. Two tests on the proposed model were done, taking into account the added

variables, which are the labour square (LABsq), capital square (CAPsq), and interaction term of capital and labour (CAPLAB), to see its fitness to the data. It is important to note that the training variable does have an effect on output, and it is already embodied in labour input since labour is here defined as the sum of both trained and untrained employees. This explains the reason for treating only capital and labour as direct inputs when considering the stochastic production function. The two tests done, the f-test², for the joint significance of the additional variables in the model, and the likelihood-ratio test³, which tests whether the parameter vector of the statistical model satisfies the proposed constraints, support the continuation of analysis using the translog function model. In addition to the two tests done, the sum of the squared residual (SSR) for the unrestricted model (Translog specification), which was 103.97, and the restricted model (Cobb-Douglas specification), which was 476.60, were compared, preference was given to the model that minimizes the SSR. Hence, the first model as built from Equation 3.4 becomes

$$\ln Y_i = \ln A_i + \beta \ln K_i + \alpha \ln L_i + \gamma \ln K_i^2 + \phi \ln L_i^2 + \psi \ln K_i \ln L_i + \lambda \ln \text{TRAIN}_i + \xi X_i + \varepsilon_i \quad (3.6)$$

And the second model as built from Equation 3.5 becomes

$$\ln Y_i = \ln A_i + \beta \ln K_i + \alpha \ln L_i + \gamma \ln K_i^2 + \phi \ln L_i^2 + \psi \ln K_i \ln L_i + \lambda \ln \text{TRAIN}_i + \sigma \ln \text{EDUC}_i + \mu (\ln \text{EDUC}_i * \ln \text{TRAIN}_i) + \xi X_i + \varepsilon_i \quad (3.7)$$

Table 3-1: Variable measurements from Chapter 3 model

<i>Variable</i>	<i>Measure</i>
Training (TRAIN)	(%) of employees who received training during the past two years by the time the survey was conducted (Dearden et al, 2006)
Education (EDUC)	(%) of employees who have upper level education qualification during the time the survey was conducted
Labour (L)	Total number of permanent employees in a particular firm
Capital (K)	Firm total fixed assets per employee
Firm productivity (Y) – non-financial measure	Deflated last fiscal year sales values per employee (Zwick, 2006)
Firm profit (Y) – financial measure	Firm gross profit per employee

² The f-test of the joint significance of additional variables is $f(3,30) = 67.6$, $P > F < 0.01$.

³ The likelihood ratio-test for the constrained model is $\text{LR chi}^2(3) = 357.48$, $P > \text{chi}^2 < 0.01$.

Other factors in the model (X)	Firm size and Firm sector
Firm size	Dummy variable: ≤ 20 employees (1), >20 employees (0)
Firm sector	Dummy variable: Manufacturing (1), Non-Manufacturing (0)

3.3.1.2 Analysis technique

The study uses hierarchical regression to test the two hypotheses separately. In the first level, the relationship of training intensity and firm performance is determined to realize the direction and magnitude of the possible existing effect on both non-financial and financial return measures. Then the regression is conducted on the model presented in Equation 3.4 to estimate the moderating effect of the upper-level education intensity on training and firm performance relationship.

In order to accommodate the possible influence of observable and unobservable factors on the presented coefficients, the two models were re-estimated following three pre-identified scenarios: the productivity level of the firm, the residing sector, and the size of the firm. This also gives in-depth analysis of the effect of training on performance measures from different angles. In the process, this study also addresses selectivity bias from reported firm's training intensity level and respective quality of the employees by controlling for the individual strength of the firm, the sector that the firm belongs to and the size of the firm.

3.3.1.3 Endogeneity effect

The issue of endogeneity is very liable in cross-section analysis, which can result in biased estimates. Among the common causes, it is the fixed effect from unobservable factors such as technology changes, economies of scale, and firm unobservable strengths, which impact both the firm performance (productivity and profit) and the explanatory variables, mainly training (Huselid, 1995; Zwick, 2006). From another side, the endogeneity effect can also result from significant causality relationship between establishment performance and the training variable. However, the possibility of accommodating the unobserved time-invariant effect from unobservable factors and addressing causality issues is easier only when the panel analysis is done.

Since we cannot address the issue of endogeneity effect in our study due to the nature of the data used, we can only observe how significant the endogeneity effect affects the findings of the main analysis by employing the impact analysis techniques. In this case, the propensity-matching analysis is used to check the impact of training effect regardless of the level of training intensity. Using the training dummy variable in determining the treated and control groups address the issue of selectivity bias and other unobservable factors that determine the level of training intensity, the measure used in our main models. The treatment effect was determined by comparing the average performances of the trained establishments and the non-trained establishments. Five covariates were employed to create a match: establishment size, establishment age, establishment sector, number of employees, and capital. The assumption is that, considering the diversity of the given information in the data, the firms' performance has a potential of significantly differing based on the selected factors due to their role on firm's effectiveness. Propensity scores were computed, and since the analysis is done using the survey dataset, the sampling weights were considered to provide for weight effect (DuGoff, Schuler and Stuart, 2014). In obtaining the propensity score, we included the block option to ensure that the mean pscore is not different for treated and controls in each block.

Inferior of block of pscore	Control	Treated	Total
0.0860455	38	9	47
0.2	114	41	155
0.4	34	27	61
0.6	10	29	39
0.8	0	2	2
Total	196	108	304

In obtaining the treatment effect of training, the analysis which was inferred to population size was done using the new weight created from the pcores and given sampling weights (Kuo, Bird, and Tilford, 2011). In order to increase the probability of covering for the

unobserved factors, the regression adjust option was selected due to the nature of the treatment.

3.3.2 *Data*

In examining the effect of training on firm performance, this study employed secondary data from the 2015 TESS conducted by the Enterprise Analysis Unit and the Education Global Practice of the World Bank Group. As explained in the 2015 Tanzania Enterprise Skills Survey Report by the World Bank (WB, 2015), the stratified random sampling was used to obtain and design the sample for the survey. The sampling design used eight pre-identified economic activities following ISIC code revision 3.1⁴: three size categories of the firms (small, medium and large), and five regions (cities and surrounding business areas) to create the strata. According the report, for the firm to be eligible in the sample it had to be formally registered, have five or more employees, still be in business, be able to be traced with name and address, and agree to respond to the screener questionnaire. However, median weights were used in the selection process where the eligible firms for selection were those whose eligibility was directly determined, and those who refused to complete the screener questionnaire or rejected answering machine messages or fax as the only response were not included. Based on the median eligibility assumption, the universe estimate was 3,422 firms for the survey. Of these, 1,521 firms were contacted of which 33.3% were eligible for the survey (WB, 2015). By the end of the survey, 424 completed structured interviews were successfully completed.

Moreover, the WB (2015) reported that data was collected using a single standardized questionnaire administered to all firms with a focus on firms' skills levels and skills development, particularly through training. The questionnaire had eight sections, of which six were main sections and two contained control information. In the WB (2015) questionnaire, among the key questions that were crucial for obtaining data to support this study analysis, was the question of whether the firm had formally trained its employees, in-house or outside, in the past two fiscal years, and if yes, the percentage of trained employees. The respondents were also asked the percentage of their employees who received high school and

⁴ Food processing (ISIC15), textile and garments (ISIC 17 & 18), fabricated metal products (ISIC 28), furniture (ISIC 36), construction (ISIC 45), hotel and restaurant (ISIC 55), transport (ISIC 60 & 61) and Information technology (ISIC 72)).

college/university education. In obtaining the productivity of the firm, the deflated sales values using price index was used (Melitz, 2000; Zwick, 2006). Profit was another return measure used in the analysis and was obtained by deducting the cost of sales for the last fiscal year from the annual sales of the respective year, which provided gross profit data. Net profit before other expenses such as rent, interest, and tax deducted was computed by deducting total annual cost of labour (which was the only expense information provided in the survey database) from gross profit. However, there was no statistically significant difference between gross profit and profit data⁵ and so the analysis continued using the gross profit data.

3.4 Results

3.4.1 Descriptive statistics

As observed in Appendix A, only 32% of the surveyed firms managed to train their employees during the survey targeted period where on average at least half (56%) of their total permanent employees were trained. The statistics show that this group had more quality employees than those that did not train their employees, with averages of 43% and 36% respectively of the employees with upper education qualifications. Service related organizational operations seemed to attract more training where the majority of the firms that trained their employees fall in the non-manufacturing sector while the remaining 45% were in the manufacturing sector.

3.4.2 Regression results

3.4.2.1 Hierarchical regression

As can be observed in Table 3-2, the step-by-step regressions that have been done from model 1 to model 2 for both performance measures assist in tracking the significant effect of the added education variable on the training coefficient. It displays the distinction of the effect of training on firm performance before and after the moderating effect. From model 1 results, the effect of training intensity on firm performance is statistically non-significant for both return measures. Observing the coefficients regardless of significance level, in both scenarios training intensity has a negative effect on average firm performance. This means the alternative hypothesis one (H1-1), which stated that training has a positive effect on firm performance, was rejected.

⁵ The mean of natural log of gross-profit is 17.09 with 314 unique values and mean of natural log of profit is 16.93 with 277 unique values.

Table 3-2: Moderating effect of upper-level education intensity

	Profit Return Measure			Productivity Return Measure		
	<i>Model 1</i>		<i>Model 2</i>	<i>Model 1</i>		<i>Model 2</i>
Labour (ln)	-0.789(0.929)	-0.498(1.214)	-0.347(1.148)	-0.731(1.175)	-0.496(1.015)	-0.663(0.969)
Capital (ln)	0.746(0.407)*	0.82(0.863)	0.889(0.77)	0.756(0.363)**	1.730(0.675)**	1.701(0.687)**
Labsquare (ln)	-0.216(0.0824)**	-0.322(0.0703)***	-0.250(0.0692)***	-0.265(0.0786)***	-0.268(0.0315)***	-0.252(0.032)***
Capsquare (ln)	-0.0372(0.0157)**	-0.041(0.0251)	-0.039(0.023)	-0.038(0.0136)***	-0.061(0.0214)***	-0.06(0.0217)**
ILAB*ICAP	0.152(0.0526)***	0.169(0.059)***	0.125(0.0461)**	0.170(0.0682)**	0.142(0.053)**	0.143(0.0523)**
Training intensity (ln)	-0.044(0.134)	0.213(0.115)*	-2.597(0.749)***	-0.214(0.129)	0.118(0.0723)	-0.624(0.596)
Education intensity (ln)		0.101(0.153)	0.704(0.201)***		-0.014(0.125)	0.172(0.175)
Education intensity (ln) * Training intensity (ln)			0.754(0.195)***			0.193(0.155)
T/Manager education years (ln)	-0.811(0.556)	0.788(0.314)**	0.910(0.31)***	-0.541(0.415)	0.740(0.258)***	0.799(0.263)***
T/Manager years of experience (ln)	-0.350(0.184)*	-0.570(0.0964)***	-0.381(0.107)***	-0.108(0.181)	-0.420(0.0776)***	-0.380(0.0799)***
Sector dummy	-0.888(0.27)***	-0.621(0.314)*	-0.278(0.276)	-0.628(0.293)**	-0.192(0.205)	-0.143(0.196)
Firm age dummy	1.270(0.257)***	0.314(0.234)	0.295(0.224)	1.319(0.321)***	0.467(0.2)**	0.430(0.211)*
Size dummy	0.413(0.539)	0.335(0.583)	0.102(0.566)	0.536(0.443)	-0.208(0.306)	-0.254(0.31)
Constant	14.46(2.841)***	10.86(7.063)	6.977(6.291)	12.08(2.975)***	1.517(5.465)	1.28(5.614)
R-squared	0.574	0.568	0.665	0.567	0.586	0.595

Standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

In model two this study observed that the coefficient and significance level of training effect on the profit return measure positively changed while it remained negative and non-significant on productivity return measure after accommodating the effect of upper-level education intensity. Focusing on profit return measure, when it is assumed that the upper-education intensity is zero, the negative relationship of training and firm performance is observed ($b=-2.59$, $p<0.01$).

However, when the average upper-level education intensity value is inserted (IUppereducation mean = 3.68) to calculate the total effect of interaction variable⁶, a positive slope between training intensity and firm performance is observed (see the interaction plot in Figure 3-2 for a graphical depiction of the effect).

Figure 3-2: The interaction plot – the moderating effect of upper-level education

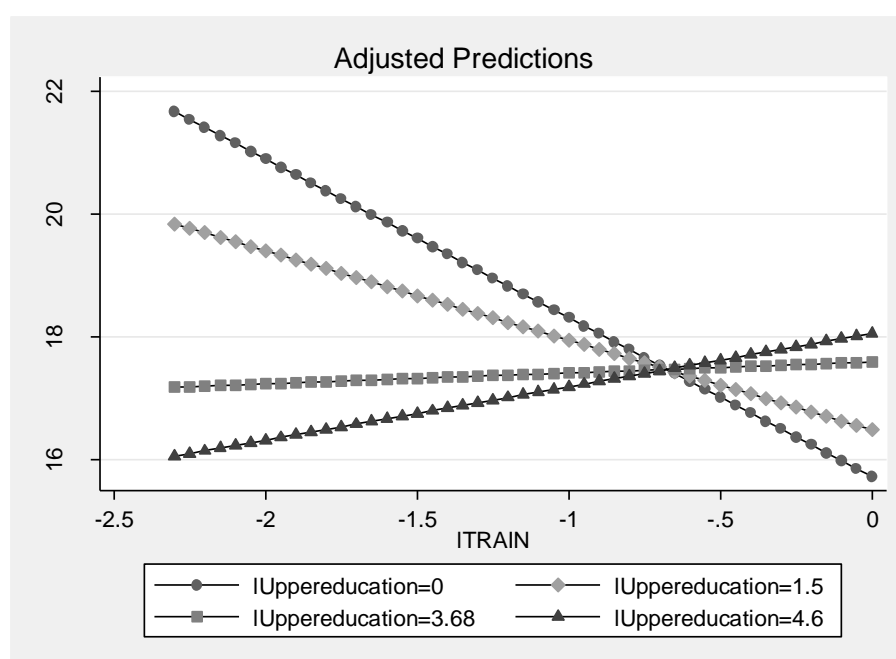


Figure 3-2 shows the change in the slope between the training effect and the firm performance when the upper education intensity level varies. In constructing the respective interaction plot, the values selected to accommodate the change in education intensity include the minimum, maximum and mean values: 0, 4.6 and 3.68 respectively. The plot also examined 1.5 value for the upper education level to track the changes that occurred on the

⁶ Slope (dY/dT) = $\sigma + \gamma$ upper-level education, where: σ is the coefficient of Training and γ is the coefficient of Education intensity.

training and firm performance slope before mean value. It is observed that the change occurring on the effect of training on firm performance increased positively with the increase in the level of education intensity.

The second alternative hypothesis (H1-2) stated that the interaction effect of training and upper-level education will lead to a higher positive training effect on firm performance. Two circumstances that emanate from the analysis done are considered before suggesting a conclusion for this hypothesis. First, the interaction effect did not result in a “higher” positive training effect as projected since the effect was already *negative* in model one. Secondly, the moderation process led to a positive and significant training effect on the profit return measure alone, while it was not the case for productivity return measure. In that regard, this study accepts the null hypothesis that the interaction effect did not result in a higher training effect on firm performance, when considering both return measures. Actually, the interaction effect changes the results completely from a negative relationship to a positive relationship, particularly on the profit return measure, which is still an interesting finding.

3.4.2.2 Robustness check: interaction effect in different scenarios

Considering the productivity level of the firm, as shown in Appendix B, for those firms which have zero in their education intensity, the negative magnitude of the effect was larger under the profit return measure with an average slope of 4.45 ($p < 0.01$) for the two subgroups compared to the results observed under productivity return measure ($b = -1.9$, $p < 0.05$). However, as in the main models, the training effect began to increase positively when the education intensity began to increase.

Similar results were observed when size of the firm was considered to cluster the firms. As presented in Appendix C, a negative relationship is revealed between the training intensity and the average firm performance when assuming the education intensity level is on average zero. However, the analysis reflects a positive interaction effect from upper-level education intensity and results in a positive training effect, particularly on the firm profit.

As in the previous categories, close results were observed when the designated sector of the firms was considered, as can be seen in Appendix D. Still, the negative training effect on the firm performance was witnessed for both return measures when the assumption was that the firm has zero upper-level education intensity. While the effect was not significant for the non-manufacturing firms, considering both the main effect and the interaction effect, it was significant for the manufacturing firms.

3.4.3 *Treatment effect: matching the treated group and the control group*

Through Propensity Score Match (PSM) analysis, the difference in average performance of the treated and control groups is realized using training as the dummy variable. Considering the survey dataset, the sampling weights were applied to provide for weight effect (Dugoff, Schuler, & Stuart, 2014; Kuo, Bird, & Tilford, 2011) between the direction of the training effect under PSM analysis and the main model results were used as a deciding factor on the existence of the endogeneity effect. The analysis employed the regression adjustment treatment-effect estimator that uses the differences in the averages of treatment-predicted outcomes and actual treatment effect (Rubin, 1978). As can be seen in Appendix E, the results show that investing in training leads to a negative effect on the firm's productivity, regardless of the proportion of trained labour. The training effect causes a negative response on average productivity by 4.8% from the average of 16.95 productivity level if not trained. This leads to the conclusion that there is no endogeneity on the estimated models and the results presented are not biased.

3.4.4 *Discussion*

A number of unexpected findings were obtained from the analysis done, with reference to the existing training theories and the majority of the existing empirical studies. From the model estimates, it can be clearly seen that the effect of training on firm performance is highly determined by the firm employees' education level and intensity. A few of the studies done on related topics have reached similar results, where a negative or non-significant relationship between training and firm performance is observed, especially when employees' basic education is not considered (Schonewille, 2001; Thang *et al.*, 2010). However the remainder, which are the majority, have reported a positive significant relationship between training and firm performance (Chi *et al.*, 2008; Colombo & Stanca, 2014; Konings & Vanormelingen, 2015). These results can be partly explained by the environmental context in which the studies were done. Most of the training done in developing countries is not explicitly effective, especially when considering the matching of demand and supplied skills from training done (Darvas & Palmer, 2014; Niazi, 2011). This can be well explored in further research, to observe the effectiveness of the training done in developing countries, if they manage to positively affect the employees' skills when their basic education is not considered.

Hypothetically, it was expected that training, as a human capital practice, should make a significant positive contribution to performance, particularly for firms in the manufacturing sector of a country which is in early stages of industrialization (UNIDO, 2013). However, the results in this study portray a different message which implies, in this country context, that training intensity alone is not satisfactory measure to create quality productive employees if their education level and intensity are not considered (Barrett & O'Connell, 2001). After considering the interaction effect, it was observed that the training and education factors together have a significant effect on the firm's performance, similarly to what has been reported in other studies (Blundell *et al.*, 1999). This confirms the argument provided by Becker (1994) that education and training variables are among the key elements which build an intangible asset to the firm, referred to as human capital. It also agrees with the presented fact that education of employees is one of the observable factors that has the potential to change the way training affects the firm's performance since it has a direct initial impact on labour quality (Backman, 2014; Kahyarara & Teal, 2008). Although the demand for training is somehow connected to the low education which the employees have (Darvas & Palmer, 2014), the results show that the transformation of the imparted skills and knowledge obtained from training is also linked to their initial formal education, particularly upper-level education.

The significant changes on the training effect were more observed under the profit return measure than on the productivity return measure. The time effect for the reflection of the changes occurred in productivity to be revealed under the profit return measures can explain why different results between the two firm return measures are observed (Rucci *et al.*, 1998; Zwick, 2006). Again, the results showed that the negative main effect of training on the firm performance was larger under the profit return than under the productivity return when the education intensity is assumed to be zero. This can be explained by the fact that there are direct and indirect expenses which the firms have to undergo when training their employees, which are easily reflected in profit measures (Arthur, 1994; Rucci *et al.*, 1998). Examples include the slowdown of the operation when employees are attending training, the time it takes for employees to familiarize themselves with the new skills acquired, the post-training environment for smooth implementation of the new techniques acquired, and the direct costs which most of the firms incur to finance the training.

3.5 Conclusion

This chapter examined the moderating effect of upper-level education on the relationship of training intensity and the performance of firms, based on productivity and profit return measures. Although the analysis ended up accepting null hypotheses, the findings confirm the argument presented in the introduction section of this study: that there is a unique effect derived towards the firm's performance when different sources of human capital are combined. It was observed from the estimated models that when there is an increase in the firm's education intensity, particularly above the mean, then there is a strong chance for a positive training effect on the firm's performance regardless of the productivity level, size and the sector to which they belong. The negative relationship observed before the training effect was moderated is, however, interesting to be studied further to understand among other things the effectiveness of the training that the employees attend, and assessing if they conform to the existing skills needed. This is further assessed in Chapter 4.

It is however necessary to caution the interpretation of the results in this chapter. The findings obtained only provide suggestive and not conclusive evidence. The analysis had some limitations including the use of cross-sectional data, which limits the important causality test between training and firm performance. This is only possible if panel data is employed. The use of secondary data not only led to a limitation on the model specification and analysis techniques, but also on the selection of training measurement to be used. There are other training variable measures such as type of training attended depending on the topic, training hours, training expenditure, which could have given wider and detailed results for a reliable conclusion. However, this was not possible due to the limitation of the data. Chapter 5 of this study addresses the latter limitation by investigating different forms of training that firms adopt and giving the respondents a chance to comment on their individual effectiveness towards the expected firm return.

Nonetheless, the findings of this chapter still serves as an important hint to the firms' management who have a role to make strategic decisions particularly on human capital development. The information obtained is also crucial for country policy makers who have to decide where to direct the existing limited resources to hasten the move of developing their human capital, particularly for purposes of structural changes to the economy .

CHAPTER 4: TRAINING EFFECTIVENESS: HOW DO EMPLOYEES AND FIRM TRAINING NEEDS MATTER?

4.1 Introduction

The effectiveness of the implemented human capital development policies contributes substantially to the firm's sustainable competitiveness due to the unique features which human resources have compared to other firm resources (Barney, 1991; Wright, McMahan, & McWilliams, 2001). Training policy is among the policies that firms strategically employ to improve the productivity of their labours. The investment in employee training is mostly done with respect to the firm's needs and priorities at a particular time in order to maximize the expected output (Aragón-Sánchez *et al.*, 2003; Ballot *et al.*, 2006; Becker, 1994; De Grip & Sauermann, 2012). Normally, there is no direct effect of training on the firm's output, but the effect is transferred through predetermined responses while considering the existing circumstances (Chi *et al.*, 2008). Evaluating the presence, strength and significance of the expected responses towards the final output is necessary for making informed conclusions on the total effect (Aragón-Sánchez *et al.*, 2003; Preacher *et al.*, 2007), because the contingencies of the anticipated final output are inclined on the reflected outcomes in the process, which is usually grounded in theory.

While the majority of the existing training evaluation models present the mediation process, which shows how the training effect is transferred to final output, few have considered the existing circumstances within the firms as the determinant of the return to be obtained (Tharenou *et al.*, 2007). The handful of studies which considered the moderation of the training effect transfer process, did not exclusively reflect how training directly defines the status of the employees' skills depending on the existing needs (Chi *et al.*, 2008). Seeing the gap in the literature and attempting to extend the information which managers need to consider when evaluating the effectiveness of training, this study builds on the existing related models, particularly Tharenou *et al.*'s (2007) conceptual model, by adding the "when" missing puzzle in the evaluation process. This is meant to establish not only the process involved in the transfer of the effect, but also under what circumstances training becomes more effective. The question which this chapter addresses is, considering the level of firm training needs in place, does the increase in training intensity influence the positive change in

employees skills and so their productivity? Using the World Bank Enterprise Survey Data from Tanzania, the PLS-SEM is employed to predict the effectiveness of training with respect to firm return. The moderated parallel mediation model is then formulated guided by the contemporary mediation models theorist, Hayes, from the statistical arguments and suggestions obtained from his studies (Hayes, 2009, 2013, 2015, 2018; Hayes & Scharkow, 2013) as supported by other authors such as Bauer, Preacher, and Gil (2006) and Namazi and Namazi (2016).

The study argues that, once the justifiable and reliable methodology is employed, and correct statistical models and estimations are done, the training effectiveness can be determined in a more definite manner. The effectiveness of training is linked to the human resource outcomes, in this case observed through three important employee skills as perceived by the top management, but also dependent on the basic quality of employees (Noe & Colquitt, 2002). It is important for management to determine if the existing training needs is also linked to lack of other human capital resources, for example low level of education, less experience on the job or negative impact from family background (Becker, 1994). Training needs might be high, but if the capacity of the trained employees is basically low, less is expected from the knowledge imparted (Blundell *et al.*, 1999). It is contended that the perceived needed skills and the factual needed skills must be similar for the firm to obtain the expected return, especially when the decisions are normally done based on managers' perceptions. This is simply to say, the training supply should match the skill demand for optimal return.

In the next section, a brief theoretical and empirical literature review linked to the training effectiveness evaluation process is presented, and the conceptual model and hypotheses to be tested are formulated. The methodology is presented in section 4.3 and the results and discussion followed in Section 4.4. The chapter is concluded in section 4.5 where the limitations of the study and its practical contribution are highlighted.

4.2 Training effectiveness evaluation process: literature review

The theoretical literature on the training effect evaluation suggests a number of models to explain the systematic way in which training might lead to expected firm performance, that is, the mediation process (Holton, 1996; Kirkpatrick & Kirkpatrick, 1975; Yamnill & McLean, 2001). However, researchers in the field raised their concern on the methodological guidance to follow when adopting the hierarchy: outcomes measurement to apply with

respect to the purpose or type of evaluation is not clearly prescribed and so they fail to make systematic arguments (Kraiger *et al.*, 2004).

The conceptual model presented a decade ago by Tharenou *et al.* (2007) accommodates most of the concerns raised by different researchers, suggesting steps and measurements to be followed in training evaluation process. Part of their aim was to establish clear causal linkages in the process, and to address the intervening variables matter by displaying the mediation role they perform as seen in Figure 4-1. However, their model considered the “how” part of training effectiveness and left out the “when” part. As well explained by Preacher *et al.* (2007), where necessary, the analysis becomes richer when the “how of the when” or “when of the how” is taken into account during model formulation. This is even more important for training effectiveness evaluation models since the effect is not direct, but mostly determined by different circumstances.

Figure 4-1: Theoretical model presented by Tharenou, Saks and Moore (2007)



The use of mediation models to realize the effectiveness of training has been long emphasized by different empirical works such as those of Becker and Huselid (1998) and Black and Lynch (1996). A decade ago, Zinovieff and Rotem (2008), in their review and analysis study on training evaluation methods, also argued that most training evaluations are not efficiently done and therefore reach incorrect conclusions. They emphasize that the goal of doing evaluation for a certain implemented program is to provide inputs for the policy and decision makers from an empirical point of view, and so the information should be rich. Nevertheless, scanty empirical business studies that based their analysis in the moderated mediation models have been done to date. The difference of this work to the existing studies is the way that training effectiveness is defined and the methodology used to test the model.

A few studies analysed training effectiveness in different contexts, but not using the PROCESS⁷ analysis as this study does. For instance, Aragón-Sánchez *et al.* (2003) defined training effectiveness from the response they see on employees’ involvement, human resources indicators, quality and labour productivity. The analysis needs to be extended to

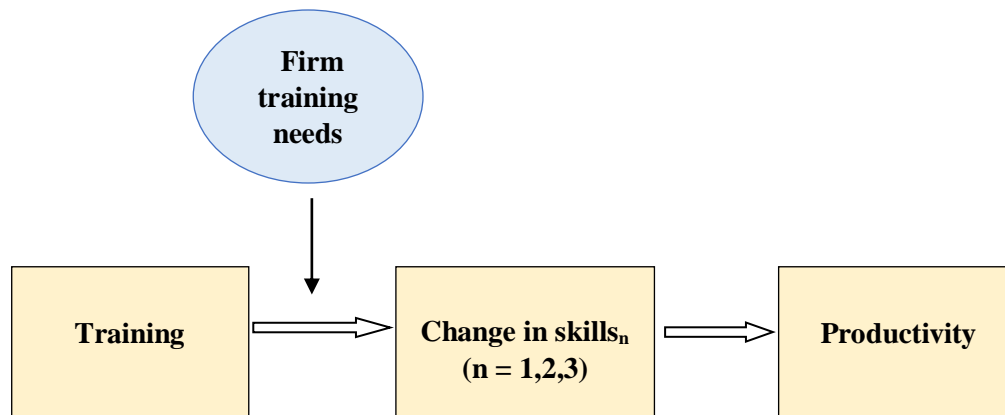
⁷ Mediation, Moderation and Conditional Models fall under PROCESS Analysis (Hayes, 2013).

firm output with respect to the existed needs to confirm if the training was effective. Another group of authors skipped the human resource outcomes step when examining training effectiveness. For example, Chi *et al.* (2008) conducted a process analysis in their study to determine if the FDI training was effective in relation to the existing need. In their moderated mediation model, however, one more mediator was expected after training to determine if the FDI training conducted was correlated to the employees' required skills post-training before observing the final effect on the firms' performance. The lack of the HR outcomes in the model cannot be lightly considered since the performance of the firm as observed from sales can be determined by a number of factors apart from training (Aragón-Sánchez *et al.*, 2003; Vega-Jurado, Gutiérrez-Gracia, Fernández-de-Lucio, & Manjarrés-Henríquez, 2008). The limitation observed in Chi *et al.*'s (2008) model was also observed in the work of Ng and Siu (2004) who argued that training effectiveness can objectively be determined by observing the firm's productivity through its sales. Similarly, they define training effectiveness through the direct effect, missing the process involved to transfer the effect.

When it comes to mediation test, the majority of the empirical studies in business and management studies use the traditional Baron and Kenny (1986) test which has been revisited for reconsideration by a number of recent studies (Hayes, 2009, 2013; Zhao, Lynch, & Chen, 2010). The guidelines provided by Hayes (2013, 2009, 2015, 2018) have been mostly used in communication, psychology and clinical studies and less in business and economics studies. This study addresses the methodological limitations from other empirical studies when it comes to establishing training effectiveness by accommodating the recent mediation test guides.

4.2.1 *Conceptual model and hypothesis formulation*

The conceptual model of this study extends the existing mediation model by Tharenou *et al.* (2007) through including the firm's training needs as a moderating factor. This study expands the human resource outcomes to target more specific skills that are perceived as important for firm output. Combining the "how" and "when" scenarios, Figure 4-2 portrays the conceptual model of this study.

Figure 4-2: Conceptual process model for training effectiveness – role of training needs

When the individuals' skill gaps are correctly determined, the training implementation is expected to become effective and address the firm's training needs (Daniels, 2003; Freel, 1999). It is therefore proposed that:

Hypothesis 2-1: Training needs positively moderate the relationship between training and the employees' skills change.

The meaningful improvement on the needed employee skills after training is a priority for the firms' decision makers to insure that a significant return on their investment is obtained (Ballot *et al.*, 2006; Yiu & Saner, 2005). Therefore, it is proposed:

Hypothesis 2-2: There is a positive relationship between the employees' skill status and firm productivity.

According to Kraiger *et al.* (2004), training should be linked to the existing firm needs to become effective. The authors argue that need assessment should be employed as a compass to determine how the training strategy should be implemented to obtaining the forecasted firm return through human capital. Empirical literature also supports the argument that training leads to expected firm return when addressing the existing firm needs (De Grip & Sauermann, 2012; Tzannatos & Johnes, 1997; Úbeda García, 2005). This hypothesis intends to determine if the model is correctly conceptualized. Hence, it is proposed that

Hypothesis 2-3: The total indirect effects between training and firm productivity are moderated by the firm training needs.

4.3 Methodology

4.3.1 Data

The study employs secondary data from the 2015 TESS conducted by the Enterprise Analysis Unit and the Education Global Practice of the World Bank Group. The survey was done under the firm level and for the purpose of this study firm was presented as a firm. As discussed in the WB (2015), stratified random sampling was used to obtain and design the sample for the survey based on eight pre-identified economic activities following ISIC code revision 3.1⁸: three size categories of the firms (small, medium and large)⁹, and five regions which qualified under city or surrounding business areas categories. For obtaining reliable current data, the sampled firms had to be formally registered, with five or more employees, still be in business, be able to be traced with name and address, and agree to respond to screener questionnaire. Based on the median weight eligibility assumption determined from the screener questionnaire, the universe estimate was 3,422 firms for the survey. Of these, 1,521 firms were contacted of which 33.3% were eligible for the survey. By the end of the survey, 424 standard questionnaires were successfully completed administered by professional contracted researchers (WB, 2015). The questionnaire focused on firms' skills levels and skills development, particularly through training.

The composition of the surveyed firms was well balanced in terms of sector. Manufacturing, which includes textile, food, metals and machinery, and wood and furniture subsectors comprised 49% of the total firms. The distribution of data according to size of the firm was skewed due to the nature of firms' composition in the country: while 63.44% of the total were small sized firms, only 12.74% were large firms. The database included firms with different levels of experience in their businesses. More than 50% of the firms had more than 15 years of experience by the time of the survey. In terms of training, approximately 30% of the final sample had trained their employees during the past two years by the time of the survey. The respondents of the administered questionnaire were either the top manager of the firm or a manager with enough experience with the firm by the time of the survey. This was to ensure the appropriateness, validity and reliability of the data.

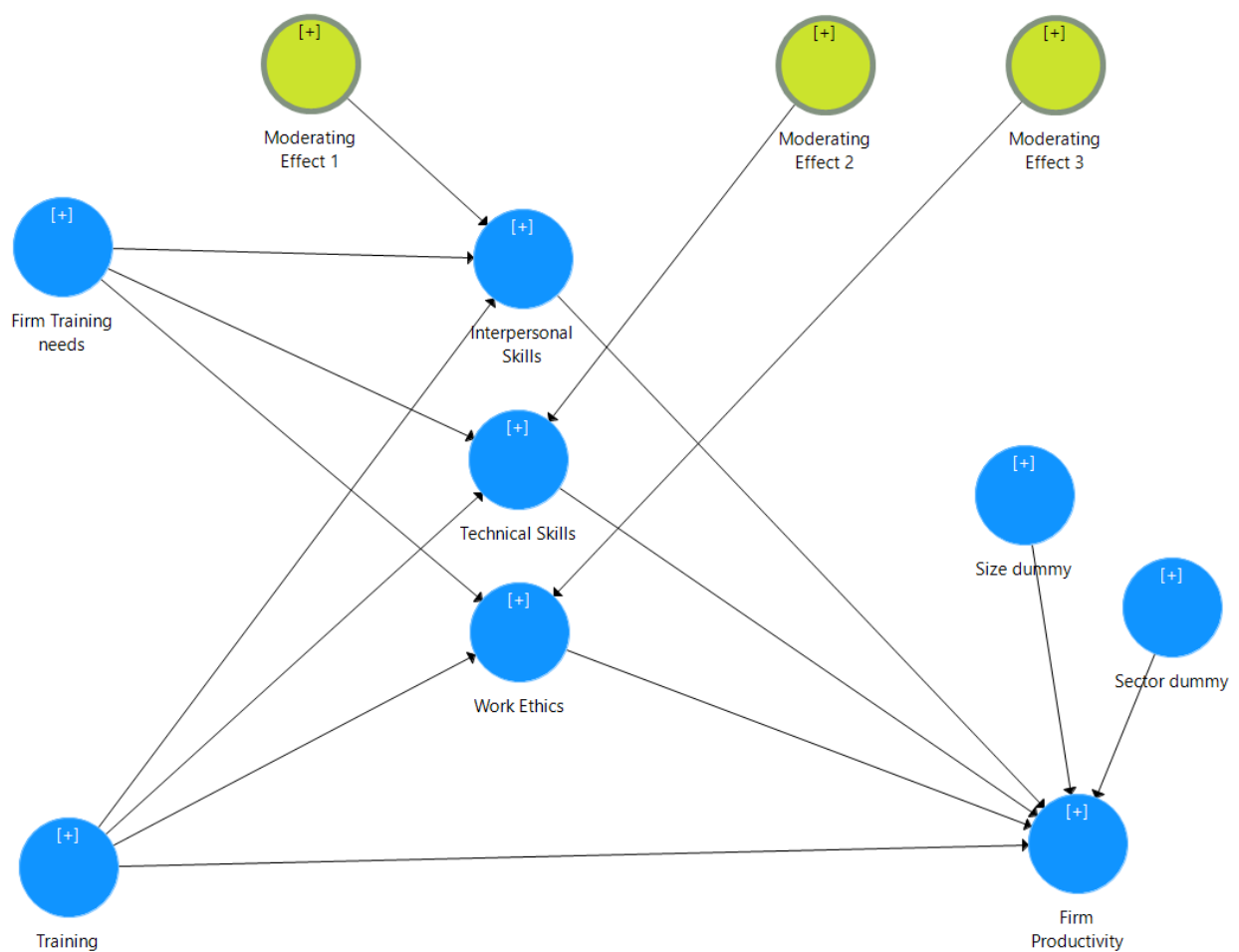
⁸ Food processing (ISIC15), textile and garments (ISIC 17 & 18), fabricated metal products (ISIC 28), furniture (ISIC 36), construction (ISIC 45), hotel and restaurant (ISIC 55), transport (ISIC 60 & 61) and Information technology (ISIC 72)).

⁹ Small (less than 20 employees), Medium (20 – 99 employees), Large (more than 100 employees).

4.3.2 Model specification

The main objective of this chapter is to realize the effectiveness of training by establishing the significance of the indirect effects, for each identified skill, when moderated by the firm's training needs. This considers the fact that, for training to have an impact on employees' skills, there should be a match with existing firm needs. In this case, the study considered using the *moderated parallel multiple mediator model* where the path of training intensity to firm productivity is supposed to be mediated by the three identified employees' skills as seen in Figure 4-3. The training need, however, is included as a moderator on the path of training to the three employees' skills. The similar model was also presented by Hayes (2013) in his process model templates (model 7). Hayes discussed mediation models in several possible possibilities, which can be employed in different fields including business. In his works, he came up with over 70 mediation models and guidance on how they can be statistically modelled and estimated.

Figure 4-3: Statistical conceptual model



This model is also referred to as a *first stage* moderated parallel multiple mediation model since the moderator only covers the path before the mediators within the model (Hayes, 2015). In estimating the model, two equations are involved. The essence is to obtain the effect of X on Y through the mediator variables. The first equation represents the effect of X on M, and the second one examines the effect of M on Y when controlling for X.

$$M_i = K_{Mi} + a_{1i}X + a_{2i}W + a_{3i}XW + e_{Mi} \quad (4.1)$$

$$Y = K_Y + c'X + b_1M_1 + b_2M_2 + b_3M_3 + \sigma SizeDummy + \phi SectorDummy + e_Y \quad (4.2)$$

where K is constant and $i = 1, 2, 3$ which are the number of mediator variables. It is important to note that this paper is only interested in the moderated indirect effect and not the moderated direct effect.

From Equation 4.1, the effect of X on M is $(a_{1i} + a_{3i}W)$ and from Equation 4.2, the effect of M on Y is b_i . Scholars including Hayes (2018) and Preacher *et al.* (2007) have explained how to deduce the indirect effect of X on Y through M through finding a product of the conditioned effect (X on M, moderated by W) and the indirect effect of M on Y. The obtained indirect effect is expressed as the linear function of the moderator variable as seen in Equations 4.3, 4.4 and 4.5. Recall that this study's model has three mediators, which are the pre-identified skills. This implies that there are three specific indirect effects of X on Y to be tested: the first through M1 (interpersonal and communication skills), the second through M2 (technical skills) and the last through M3 (work ethic). The aim is to understand their presence, their strength and their significance.

$$\begin{aligned} \lambda_{M1} &= (a_{11} + a_{31}W)b_1 = a_{11}b_1 + a_{31}b_1W \\ \lambda_{M2} &= (a_{12} + a_{32}W)b_2 = a_{12}b_2 + a_{32}b_2W \\ \lambda_{M3} &= (a_{13} + a_{33}W)b_3 = a_{13}b_3 + a_{33}b_3W \end{aligned} \quad (4.3)$$

Table 4-1: Variable measurements from Chapter 4 model

<i>Variable</i>	<i>Measure</i>
Training	(%) of employees who received training during the past two years by the time the survey was conducted (Dearden et al, 2006)
Employees' skills	The rate was on a 3-Likert scale: below required (1), as required

	(2), above required (3). - Three perceived most important skills were used as parallel mediators out of eight skills surveyed. The managers were asked to communicate their three important skills by ranking.
Firm training needs	Composite score from the dummy response questions: any difficulties on - <i>maintaining production levels according to demand,</i> - <i>maintaining consistency quality,</i> - <i>implementing new technologies or improving production processes,</i> - <i>developing new products, and</i> - <i>effective sales and marketing.</i>
Firm productivity	c
Firm size	Dummy variable: ≤ 20 employees (1), >20 employees (0)
Firm sector	Dummy variable: Manufacturing (1), Non-Manufacturing (0)

4.3.2.1 Index of moderated mediation

From Equation 4.3 we are able to examine *the index of moderated mediation* (λ) for each specific indirect effect: M_1 , M_2 and M_3 (Hayes, 2015). The indices quantify the strength of the training needs (W) to increase or decrease the indirect effect of X on Y through each specific skill. The logic behind this is measuring the relationship of the moderator and the indirect effect, and assess whether the index differs from zero¹⁰. In this regard, the index through M_1 is $a_{31}b_1$, through M_2 is $a_{32}b_2$ and M_3 is $a_{33}b_3$. These indices are not meant to test the causality of the mediation, but to interpret the results obtained from the estimation done, and to observe how the statistical determined mediated effect varies by the moderator variable (Edwards & Lambert, 2007; Preacher *et al.*, 2007). It is important to note that not having a moderated direct effect in Equation 4.2 does not affect the extracted index of moderated mediation (Hayes, 2015). However, caution is taken when interpreting the index taking into account the possible limitations on the data employed such as normality. In this case, a CI bootstrapped technique which uses resampled data is used during the causality estimation.

¹⁰ When the index of moderated mediation is zero it implies that the determined indirect effect is not moderated and that no two conditional indirect effects are statistically different (Hayes, 2015).

4.3.3 *Mediation analysis*

There are several methods of analysing mediation models, the famous one being the causal steps approach of Baron and Kenny (1986). In addition to the three steps identified in their approach, the importance of making sure that there is a significant relationship between the independent and dependent variables before proceeding with the mediation test is emphasized (Baron & Kenny, 1986; Kenny, 2018). However several scholars subsequently reconsidered the arguments presented by Baron and Kenny in their approach (Hayes, 2009; Zhao *et al.*, 2010). Relating to the key requirement before continuing with the mediation test from the famous Baron and Kenny methodology, Hayes (2009) argued that the mediation effects should still be tested even when there was no direct relationship between independent and dependent variables. His argument lies on the fact that there might be no significant direct effect observed between X and Y since multiple indirect effects in between might determine the relationship of the two variables. Sometimes, other indirect effects might be positive and others negative and so net off their effect. Still, is worth testing the mediation role of certain moderators as a specific indirect effect. This study agrees with Hayes' argument and continues to test for the specific indirect effects regardless of possible results on the X to Y direct effect.

4.3.4 *Estimation technique*

The study employs the PLS-SEM estimation to obtain the coefficients for the first and second equations. The PLS-SEM analysis, which uses latent variables, reduces the bias of using the observed variables as they are, but also is the right method for prediction purposes as it presents the already bootstrapped results when testing for significance (Hayes, 2009, 2018; Preacher *et al.*, 2007). According to Hayes (2009), the sampling distribution of the indirect effect is not always normal, the estimated parameters are conditioned for 95% bootstrapped confidence intervals in order to obtain the empirical representation of the sampled distribution indirect effect.

No definite conclusion is expected when testing the mediators, which is why is a test is necessary. According to Zhao *et al.* (2010), who reconsider the work of Baron and Kenny, there are five possible conclusions from the mediation test: complementary mediation, competitive mediation, indirect-only mediation, direct-only nonmediation, and no-effect nonmediation. This theory is adopted in this study. While in complementary mediation, the sign of indirect effect and direct effect are the same, in competitive mediation the signs of the

two effects are different. In indirect-only mediation, only indirect effects are significant while in direct-only nonmediation, the indirect effects are not significant. Nothing is significant for the case of no-effect nonmediation. Note that the direct effect referred in this case is X on Y when controlling for M and the identified covariates, firm size and sector.

4.4 Results and discussion

4.4.1 Descriptive statistics

In order to understand the overall advantage realized by the firms invested in training, the general description relating to the employees' skills status, productivity, and output increment was done from the data. When comparing the existing firm training needs and the ratings on employees' skills status after the training period, Table 4-2 shows that, despite similar existing needs, not all firms trained their employees, and those who did so had an advantage since approximately 5% more firms responded that their employees skills were above those required. However, with regard to work ethics, more trained firms responded negatively. This can be partly explained by the increase in employees' negative confidence due to the increase in their market value from the knowledge acquired.

Table 4-2: Percentile table for skill level and training needs: trained and untrained groups

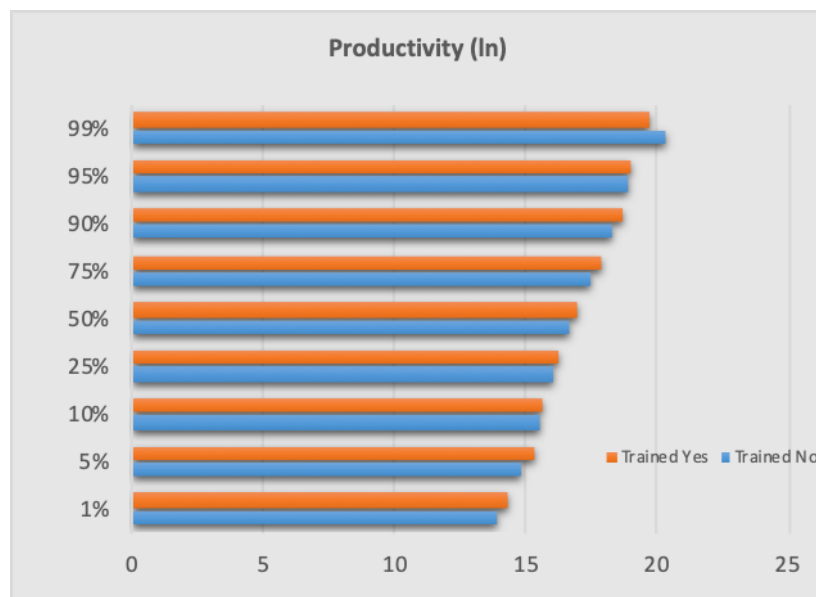
Percentiles	<i>Trained = Yes</i>				<i>Trained = No</i>			
	Interpersonal	Technical	Work ethic	Training needs	Interpersonal	Technical	Work ethic	Training needs
1%	1	1	1	0	1	1	1	0
5%	1	1	1	0	1	1	2	0
10%	2	1	1	0	2	1	2	0
25%	2	2	2	0	2	2	2	0
50%	2	2	2	0	2	2	2	0
75%	2	2	2	2	2	2	2	2
90%	3	3	3	4	2	2	2	4
95%	3	3	3	5	2	3	3	5
99%	3	3	3	5	3	3	3	5

Notes: Skills level: 1 = below required, 2 = as required, 3 = above required

Training needs is a composite score, 0-5

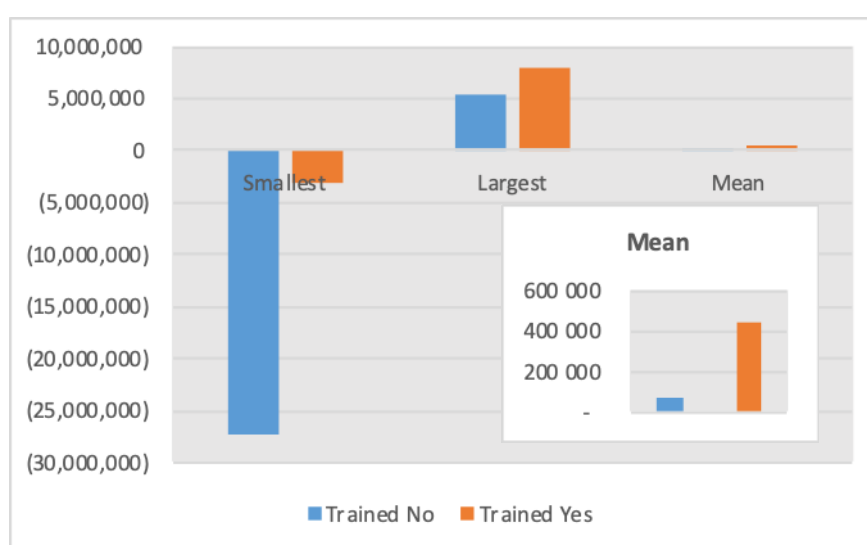
As can be seen in Figure 4-4, the productivity comparison of the two groups shows that the firms which have trained employees reported more output than the others. This statistic needs to be interpreted with caution due to the possibility of the causality effect. It is possible that firms with more sales revenue have more capacity to train their employees than the others. This kind of analysis can only be done when panel data is employed. This is one of the limitations of this study.

Figure 4-4: Firms' productivity for the trained and untrained groups



Note: Trained No = Firms which have not trained their employees over the period of time specified
 Trained Yes = Firms which have trained their employees over the period of time specified
 Horizontal axes represent the percentile

Despite the possibility of causality, the fact that there was an increase in firms' output after the employees received the training as shown in Figure 4-5 cannot be ignored. While the sales increase for the group that trained their employees during the two complete fiscal years gap was USD 423,000 on average, the untrained firms group had an average increase of only USD 76,500.

Figure 4-5: Firms' output increase within the period of the training (figures in USD)

Note: Output Increment = Output before training minus Output after training (latest output)

4.4.2 SEM results

As presented in Table 4-2, the obtained SEM estimation results include the path coefficients and 95% bootstrapped CI to reflect the significance of the effects. The path coefficients include direct effect, from the predictor variable to the output variable, and indirect effects, which go through the mediating variables. From the results, the direct effect c' that presents the relationship of training and firm productivity is not significant. Nevertheless, the non-significant direct effect provides more interest to continue studying the conditioned indirect effects of the employees' skills being one of the potential factors in explaining the effectiveness of the conducted training (Hayes, 2009, 2013, 2018). This is typical, from a human resource expected outcomes point of view as postulated in Tharenou *et al.*'s (2007) conceptual model. Normally, there are multiple mediators explaining the relationship between the predictor and the outcome variables. The final revealed direct effect is the result of a number of indirect effects, with different signs of effect having the possibility of cancelling each other (Preacher *et al.*, 2007). Aligning to the main goal of this study, which is to examine the effectiveness of the employees' training, only the mediation role of the three identified employees' skills was tested. Nonetheless, there might be other indirect effects influencing the direct effect witnessed, which are not within the scope of this study.

Table 4-3: Mediating effect – statistical model

		Outcome			
		<i>M1: Interpersonal skills</i>	<i>M2: Technical skills</i>	<i>M3: Work ethics skills</i>	<i>Y: Firm Productivity</i>
X: Training Intensity	a ₁	0.16***	0.16***	0.02	c'
W: Train needs	a ₂	-0.07	0.02	0.02	
XW: Training X Train needs	a ₃	-0.06	-0.1**	-0.05	
M1 (Interpersonal skills)					b ₁
M2 (Technical skills)					b ₂
M3: (Workethics skills)					b ₃
Sizedummy					Σ
Sectordummy					Φ
95% bootstrap CI ^a					
X: Training Intensity		0.07,0.25	0.05,0.26	-0.1,0.15	-0.08,0.13
W: Train needs		-0.16,0.02	-0.07,0.11	-0.07,0.11	
XW: Training X Train needs		-0.12,0.00	-0.21,-0.01	-0.17,0.07	
M1 (Interpersonal skills)					-0.13,0.06
M2 (Technical skills)					0.04,0.24
M3: (Workethics skills)					-0.13,0.07
Size dummy					-0.36,-0.15
Sector dummy					-0.19,0.01

Path coefficients (***p<0.01; **0.01<p<0.05);

^aPercentile bootstrap CI based on 10,000 bootstrap samples.

Recalling our first hypothesis, firm training needs positively moderate the relationship of training and identified employees' skills status. Observing the results in Table 4-3, a significant moderated relationship between training and employees' skills status is only reflected in the technical skills among the three skills. In that skill, when it is assumed that training needs is on average mean-centered, there is a significant positive simple effect from training intensity to employees' technical skills ($a_1m_2 = 0.16$, $p<0.01$). However, from the interaction variable path coefficient, when firm training needs are increasing, there is a

decreasing effect from training to technical skills ($a_3m_2 = -0.1$, $p < 0.05$). The result suggests that there is a threshold point, above average firm training needs, which, if training needs exceed that particular level, then training alone might not work but other human capital resources have to be observed. The only significant indirect effect on technical skills also implies that the training provided was more inclined to technical knowledge and less to the other skills. In that case, the null hypothesis that firm training needs does not positively moderate the relationship of training intensity and employees' skills status can be accepted. It is suggested that the employees' basic quality defined by their education level, experience and other sources have to be exclusively considered when one intends to evaluate the effectiveness of training in future studies to avoid any possible bias in the conclusion.

A positive relationship between employees' skills status and firm productivity was the second hypothesis in the conceptual model. The results in Table 4-3 shows that, among the identified skills, only technical skills significantly influence the firm productivity positively ($b_2 = 0.14$, $p < 0.01$). This implies there is a significant indirect effect from employees' technical skills status to firm productivity (95% CI = 0.04 to 0.24). However, for other skills, not only there were no significant indirect effect from training to the respective employees' skills status, but also their status does not influence the firm's productivity positively. This suggests that although the two skills – interpersonal/communication skills and work ethics skills – are perceived as important skills for the firm, their influence on the firm productivity is neither significant nor material. The null hypothesis with respect to technical skills, where it was suggested that there is a positive relationship between employees' technical skills status and firm productivity, can be rejected. This suggests that technical skills fully mediates the relationship between training and firm productivity, since significant indirect effects were observed and also a non-significant direct effect from training to firm productivity.

4.4.2.1 Index of moderated mediation

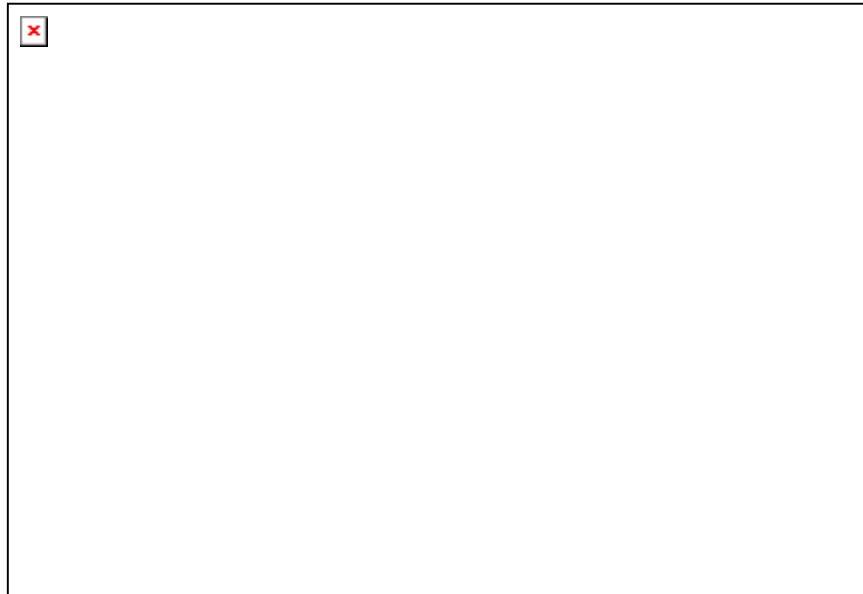
In this index, the relationship between training needs as the proposed moderator and the indirect effects established through technical skills is established. This is employed to test the third hypothesis, which focuses on determining whether the mediation process as a whole is moderated by firm training needs. In this case, no new statistical estimations were undertaken, but an interpretation of the existing estimations is conducted. In order to achieve this, the conditional indirect effect of training intensity on firm performance through technical skills is established as a linear function, graphically presented in Figure 4-6 (Hayes,

2018, 2015; Preacher *et al.*, 2007). The function is built from a product of the conditioned indirect effect of training intensity to technical skills ($a_{12} + a_{32}W$) and the effect of technical skills on firm productivity (b_2).

$$\lambda_{M2} = (a_{12} + a_{32}W)b_2 = a_{12} b_2 + a_{32} b_2 W = (0.16 * 0.14) + (-0.1*0.14)W = 0.0224 -0.014W$$

where 0.0224 is the intercept and -0.014 is the slope.

Figure 4-6: Interaction plot



Through this, the effect of training needs on the relationship of training and the firm performance through technical skills mediator ($a_{32}b_2$) is determined. From the index, the indirect effect of training intensity on firm productivity through technical skills is decreasing by 0.014 with a unit increase in training needs. This implies that a unit decrease in the training needs, results in a 0.014 increase in the respective indirect effect. These results are supported by the information obtained from the interaction plot in Figure 4-6, which presents the reaction of technical skills status from the increase in training intensity at different training needs levels. Nevertheless, the fact that the index is not zero implies that the established indirect effect in this model is linearly related to training needs as it was mentioned in hypothesis three and the model was correctly specified (Hayes, 2015). The null hypothesis for hypothesis three was then rejected in relation to the technical skills mediator, and it is suggested that the relationship of training intensity and firm performance through technical skills is moderated by the training needs.

Figure 4-6 shows that, when there are low training needs, a significant positive relationship between training intensity and technical skills outcomes is observed. On the other hand, when training needs are above average, the relationship of training and technical skills is almost zero, until the threshold point is reached and the reaction starts to become negative (refer to interaction results in Table 4-2).

Empirically, it was expected that, when firm training needs are high, the conducted training would have higher impact on employees' skills status if the training done responds to the need (Daniels, 2003; Macheke, 2012). The theoretical literature explained that training responds to the existing skills demands in the firm which are determined through needs assessment (Kraiger *et al.*, 2004). However, the results obtained suggest otherwise. Firstly, only technical skills significantly fully mediate the training intensity effect on firm performance. The respective skill related positively to both training intensity (when training needs are low) and firm productivity. Although firms identified three most important skills for their operations, the results suggest that the majority of the training attended were related to technical skills. This is not surprising since the most important skills in the firm are not necessarily the most needed skills at that particular period: it depends on the operational needs of the firm with respect to the prioritised goals, which change over time.

Secondly, at higher training needs, the response on employees' technical skills status from the training attended was significantly low. The index even suggests that with an increase of training needs, the indirect effect of training on firm performance through technical skills decreases. According to Darvas and Palmer (2014), a number of factors can explain this situation of unmatched supply and demand including the wrong type of training provided (topic), the quality of training, and importantly the basic quality of the employees, which partly contributes to the firm's existing training needs. From the study's findings, the chances are that, at low training needs, the training provided complemented the already existing individual capacity, which led to the significant improvement of employees' technical skills. Basically, the threshold point, which defines whether training will work, is built from the individual abilities of the trainees which can be different from one person to another due to existing natural potentials and the exposure which the individual had before in terms of education and experience. However, on average, firms need to observe their training needs are level when planning for training to ensure the maximum positive effect.

This mimics what has been explained by Blundell *et al.* (1999): that the basic quality of the trainees determines how effective the training provided will become. Although in their paper, they moderated the training effect with the trainees' education qualities, this study employs the training needs displayed by the firms as a reflection of their employees' competencies when considering the moderating effect. From this perspective, when the firm reveals more training needs, it implies that their employees are less competent, and so less is expected when they receive training. Similar results were presented by Chi *et al.* (2008) that when the training needs were high, the implemented training led to a decrease in organizational performance, which can be interpreted as meaning that the training did not address the identified need. Generally, training will be declared effective when it significantly addresses the skill needs and so affects the firm's performance positively (Freel, 1999). However, the level of skill demand determines how effective the training will be, if it manages to address a significant portion of the need. Some scholars presented different arguments: that having a stock of training for an employee is a strategy which can be used to address the existing demand and impact the firm's performance positively (Ballot *et al.*, 2006; Bartel, 1995; Dearden *et al.*, 2006). Nonetheless, skills need assessment and consideration of the capability of the employees are still important attributes for ensuring training effectiveness, even when a stock of knowledge and skills is created (Darvas & Palmer, 2014).

4.5 Conclusion

This chapter employed a moderated parallel multiple mediation model to examine the effectiveness of the training that employees attended, moderated by the firm's training needs. The basic assumption was that, in a situation where there is a need for particular skill, and the planning on which training to invest in was strategically done, then a significant effect of training on the respective employees' skill will be witnessed. In this regard, the firm's productivity would respond positively to the employees' skills status.

Among the identified skills – interpersonal/communication skills, technical skills and work ethics – only technical skills revealed full mediation of the training effect to firm productivity. Technical skill reflected significant bootstrapped indirect effects for both paths, that is, before and after mediation. From SEM results, the interaction variable of TxTN revealed a significant 10% average negative relationship between technical skills and firm training needs. However, the respective skill portrayed a positive significant relationship with the firm's productivity. Moreover, from the index of moderated mediation, it is concluded

that the model is correctly specified which means the indirect effects are linearly related to training needs as a moderator. The index suggests that a unit decrease in training needs causes an average 0.014 increase in the indirect effects of training to firm productivity through technical skills. The results were supported by the interaction plot, which shows that when training needs are low, technical skills responded more positively to training intensity.

A number of conclusions may be drawn from this chapter. First, it is necessary to establish training effectiveness through process analysis, understanding the how and when of the effect realized. It is one thing to conclude whether the training had an effect on firm productivity, but it is another thing to communicate how the effect was transferred and under which circumstances. The delayed effect of training was also not given special attention in this paper due to the nature of used data, which is an important scenario to consider when panel data is obtained (Colombo & Stanca, 2014; Konings & Vanormelingen, 2015; Wooldridge, 2010). For instance, there might be a delay on the firm productivity response from the interpersonal and work ethics skills. While other effects are immediate due to their nature, such as technical skills, soft skills might take more time to make a material contribution in firm performance since it depends on employees' attitude to reasonably and consistently employ such skills (Thang *et al.*, 2010; Tharenou *et al.*, 2007).

The second conclusion is linked to the role of training needs on training effectiveness. Although the results showed that training was more effective when training needs were low, this did not mean the firms did not have needs. It simply means two things: first, there is a threshold point on training needs and only below this point will the training work. In addition, it suggests that the supplied training was not directly correlated to the perceived important skills, but the possibility is the training was linked to the skills needs existing at that particular time with respect to firm operation difficulties. Nevertheless, the basic capacity of employees plays a bigger role to determine whether training will work even if the right training topics were selected (Blundell *et al.*, 1999). However, the conceptual model of this article did not incorporate the education variable for trained employees and link it to the training needs observed, since it would have made the model extra complex. Hence, as an area for further research, it would be interesting to see if there is a correlation between training needs and employees' capacity, using education variable as a proxy, to be able to make right conclusions as to why the training did not have positive effects on skills when training needs were high. In addition, this paper conceptualized only the perceived most

important skills as mediators: other researchers can consider other skills to observe the mediation role in the training effect.

Overall, various human capital stakeholders in the firm play major roles to ensure effectiveness of conducted training. These include the planners who perform need assessments and suggest the skills development programs that should be given priority, the decision makers who decide which training programs to give priority to given the limited resources and firm goals. Others are the employees themselves who should understand that training is a supplement to what they already have and hence take extra efforts to equip themselves with more knowledge relating to their assignments. The operation managers should also support post-training effects to take place to allow the completion of the training effect's transfer process, which is reflected in the firm's productivity and hence financial performance as presented by Tharenou *et al.* (2007).

Considering the mentioned position of stakeholders in the process of training effectiveness, the current study deems it necessary to accommodate their direct perception to enrich the study findings and conclusion. This is well addressed in Chapter 5 where the field data was utilized to undertake qualitative analysis intending to establish the factors leading to training effect variation in different firms. While in this chapter, the focus was on training needs in the process of examining training effectiveness, the coming chapter is the continuation and complement of these findings as it explores other factors that explains training effectiveness across firms.

CHAPTER 5: VARIATION OF EMPLOYEES' TRAINING EFFECT ACROSS TANZANIAN FIRMS: A QUALITATIVE STUDY

5.1 Introduction

The positive reflection of training effect on firm performance is not only determined by the change in employees' productivity, but also by the existing conducive environment within and outside the firm that allows for the change to occur (Montalvo, 2006; Niazi, 2011). In the monitoring and evaluation of human resource development interventions, the key factors that determine the extent of the output should be clearly observed as they dictate the conclusions to be made. This is especially when different variables are included in the analysis, which implies there is a high likelihood of having significant variations across firms (Charmaz & Bryant, 2010; Kraiger *et al.*, 2004; Thang *et al.*, 2010). The differences in the output determine the review to be done and the reaction to the interventions undertaken. In Chapter 3 of this study, the direct training effect on firm performance measures was analysed in order to get a general overview of the magnitude and direction of the effect, considering other human capital resources. In Chapter 4, the analysis was further disintegrated to understand the when of the how, in particular through observing firm training needs as the moderator of the changes occurring to employees' skills after training. Despite the interesting findings obtained, understanding the factors leading to variation of the training effect among different firms has remained an interesting subject, which this study attempts to undertake. The key question addressed in this chapter is: what is the perception of firm management and employees on the effectiveness of training taking into consideration other factors affecting the firm's performance? The sub-questions answered under the main question are: what are the factors that explain the training effect variation within and across firms? What is the role of training policy, management's willingness to change and external factors in explaining the firm's final performance in the context of different firms?

The subject of training effectiveness is becoming increasingly of interest not only to policy makers, but also in the academic literature where researchers are working to understand the observable and unobservable factors resulting to variation of the training effect across firms (Ballot *et al.*, 2006; Colombo & Stanca, 2014; Parent, 1999). Both theoretical and empirical researchers address the related issue on different approaches. In their training effectiveness

model, Noe and Colquitt (2002) discuss how the training environment influences the outcomes by highlighting the role of individual basic abilities of the trainees, the attitude toward training which influence behavioural change, and post-training factors such as work climate among the key concepts. This was further supported by studies such as those of Thang, Quang and Buyens (2010) and Tharenou, Saks and Moore (2007) among others, in which the mediation role of employees' attitude and knowledge of the subject matter as the mediators of training effectiveness was discussed. Other researchers addressed the variation of training effect by observing the training effect in specific countries or economies, which in a way accommodates the context of the respective environment as fixed effects explaining the training effectiveness (Colombo & Stanca, 2014; Darvas & Palmer, 2014; Thang & Quang, 2011; Úbeda García, 2005). The majority of these studies employ quantitative analysis techniques due to the nature of the data used, which is one of the important gaps this chapter intends to address. Obtaining the perception of the industry players on the related issue is considered necessary to address the data limitation issue raised in a number of previous related studies as a challenge when attempting to analyse some of the hypotheses (Lawless, 2009; MacMillan, 2005; O'Higgins, 2001; Van Beveren, 2012). The information obtained from the approach adopted in this chapter is intended to build wider knowledge on the topic that will thoroughly inform the stakeholders, either on areas for further research or where key decisions need to be made. In this regard, this study extends the work which has already been performed by observing the firm's internal factors through their training policy and how it is implemented, management's willingness to change and the external factors which often firms have less control of. Through the management and employees' perspective, the obtained data has been analysed to understand why training works or does not work in their specific cases.

This study employs primary data collected in Tanzania, which is a developing country that invests significantly in human resource development, especially through training. The data was collected through interviews with top managers from different sectors, firm sizes and output levels, and focus group discussions (FGDs) with the trained employees. The chapter employs thematic analysis technique intended to create a wider chance for the researcher to explore crucial information from the data more flexibly without being attached to certain theoretical methods (Braun & Clarke, 2006; Vaismoradi, Turunen, & Bondas, 2013). The questions during the field interviews were guided by the pre-determined themes that were identified from existing theoretical and empirical literature. After the data had been collected,

an inductive approach was used to analyse the information obtained in each pre-outlined theme in order to develop codes and group codes (sub-themes) for each explored theme. This, as mentioned, was meant to accommodate as much information as possible from the respondents' perceptions without missing important points.

The findings show that the training effectiveness as a process and as a contributor to firm performance are separate concepts. The training policy design, its implementation, and the post-training environment explain the effectiveness process. Firms fare differently in the effectiveness process, which explains their variations in the training effect. For instance, the design of the training policy might be considered effective across the firms, but when the moderating factors of the effect are considered differently in the implementation, the effectiveness will vary. On the other hand, the findings reflect that the training process might be effective, but the translation of the effect towards the firm's return measures depends on the managers' willingness to allow change. The managers furthered the effect transfer process when they expressed their concern about external factors having a stronger role in the firm's final reported return. The results implies that, while most of the studies related training effectiveness directly to firm performance, the omitted variables – managers' willingness to change and external factors – have higher contribution to the firm's return. The training can be effective, but still does not translate into the firm's performance measures which are commonly used, that is, firm output and profit. The second point to note from these findings is that the effectiveness process should not be under-observed, and researchers should attempt to accommodate more variables in the analysis to produce with less biased results.

In Section 5.2, the chapter presents a brief theoretical and empirical literature review related to the topic that guided the formulation of the interview questions and data analysis. The employed methodology is presented in section 5.3 and the results and discussion follows in Section 5.4. The chapter concludes in Section 5.5 where the limitations and practical contribution of the study are highlighted.

5.2 Literature review

5.2.1 Theoretical

Although the core goal of training investment is imparting positive significant effects on the firm's performance, the adaptation of the benefits varies resulting in a variation of the effect observed. Kurt Lewin's theory of change through a planned approach, as discussed by Burnes

(2004), argued that for sustainable change to occur, it should be planned in advance. The Lewin theoretical work presented four reinforcing concepts: field theory, group dynamics, action research and 3–step model. In field theory, the argument held that the observed behaviour within a certain group is determined by changes that happen in the field continuously, caused by certain forces or circumstances. In the group dynamics concept, it was argued that groups are dynamic due to their nature and characteristics, and hence their response to induced changes is different. Under the action research concept the argument was that for change to occur there should be a ‘felt need’ within a group or organization. The 3–step model guides the whole process for change to materialize, and these are changes in organization culture, norms, policies and finally practice. The four concepts work together, complementing each other, and they cannot meaningfully stand individually. However, together with being widely used in multiple studies and real life situations, still Lewin’s work received some criticisms from around the 1970s and 1980s and new approaches to change were introduced, such as the incremental model, punctuated equilibrium model and continuous transformation model (Burnes, 2004).

Some of the major raised criticisms were that Lewin’s approach is too simple and mechanistic, cannot incorporate radical transformation, ignored the role of power and politics, and was seen as advocating top-down management approach to change. Burnes addresses each of these criticisms individually and generally argued that all of the concerns were indeed addressed in Lewin’s work if read carefully, and the new theorists are just missing the points. For example, with regard to the issue of the top-down approach to change, Burnes pointed out that Lewin’s theory clearly pointed out that change should be a ‘felt need’ for each member in the group, and it can start anywhere (either top, middle or bottom), but all of the parties agree to it.

Despite the criticisms and the evolution of later theories of change, the basics of Lewin’s theory still remain valuable in the recent environment. This study adopts the Lewin’s key ideas to support the investigation into why the effect of training differs in various firms while introduced to similar forces. Usually, different circumstances contribute to the changes observed in the firm performance, and these include the dynamics in the industry to which the firm belongs, the industry policies, the general economy situation and other external factors. However, the internal side of the firm plays the major role in determining the extent of changes. The characteristics and nature of the firm, the management in place, the innate abilities of the trained workers and other internal factors determine how firms react to the

changes (Noe & Colquitt, 2002). This study explores these factors to determine their role in the observed firm performance.

5.2.2 Empirical

Most studies focus on establishing the relationship between training and firm performance, sometimes moderated by a number of identified variables (Bartel, 1994; Castellanos & Martín, 2011; Nikandrou *et al.*, 2008; Úbeda García, 2005). However, few have investigated why there is a disparity of performance among them when a similar ‘change force’ is induced in their operations (Aragón-Sánchez *et al.*, 2003; Arthur, 1994; Ng & Siu, 2004). Vega-Jurado *et al.* (2008) studied the internal and external factors which determine the adoption of introduced change to the firm. They specifically tested firm technological competencies as the internal factor, technological opportunities and appropriability conditions (firm’s capacity to retain the benefits) under external factors. They were interested in determining the joint effect of both internal and external factors, hypothesizing that the two contexts together might explain the variation of the performance for firms in different industry dynamics. However, although initially a complementing effect was expected, their results showed that the factors function as substitutes. The results implied that the two categories of factors have separate effects on the change observed, even when one factor category is not at the expected level, the other side will still impact the intended changes positively. This raises a concern about why there exists a possibility of substitutability among the factors’ contribution towards the needed outcome. Vega-Jurado *et al.*’s (2008) findings provide inputs for the adopted methodology of this chapter and the analysis undertaken, and it became interesting to find not only which factors caused variation of training effect, but also whether they have a complementing or substituting effect.

Together with the firm’s internal and external factors, Montalvo (2006) acknowledges the fact that sometimes a firm’s performance is significantly determined by subjective factors, which are mostly unique in different firms. Considering this, Montalvo focused on social-psychology decision-making models to determine the willingness, plans and intentions of firms to engage in change actions as a reaction to particular forces introduced. The structural model was constructed explaining the willingness to change attitude, normative beliefs and perceived control indexes and the behavioural domains predicting each of the indexes. Borrowing from Moltavo model, the current study also acknowledges the role of subjective

factors by including the managers' willingness to change content in the pre-determined themes, which structured the interview guide.

Although efforts have been made to unlock the mystery of the variation of the effect, still there is no consistency with regard to the factors determining the performance of the firm (Souitaris, 1999). One might still argue that the diversity observed is due to methodological differences in various studies, the dissimilarity of sectors, characteristics of firms studied, sample size, and geographical location (Vega-Jurado *et al.*, 2008). These factors will be incorporated in the analysis of this proposed study chapter to control for unobservable effects on the results. Together with the control variables, the study will individually and jointly examine the internal, external and social-psychological context of the firms to realize their effects on observed change.

The literature review led the study to address three key dimensions:

1st: Firms' internal factors, external factors and willingness to change explain the variation on training effect across firms.

2nd: The joint effect of the internal factors, external factors and willingness to change complement each other towards firm performance.

3rd: Training effectiveness as a process and training effectiveness as contributor to firm performance are different concepts.

5.3 Methodology

5.3.1 Study design

The previous chapters of this thesis employed quantitative analyses to establish the relationship of training and firm performance, and the process involved therein for the effect to be realized. However, due to the limitation of data, the analyses could not explain in detail different possible circumstances which may result in training effect variation across firms. This led to the qualitative part of this study, which intends to establish the factors that explain the portrayed training effect for different firms. In order to obtain as much information from the field raw data, a flexible qualitative methodology was an option. Thematic analysis has been mentioned as a theoretical free qualitative methodology, and accordingly, it assists the researcher to explore the data more flexibly and results in rich datasets (Braun & Clarke, 2006). For this reason, this study opted for this methodology in order to obtain the flexibility

of integrating human capital theory and other theoretical frameworks adopted to realize the objective mentioned. In obtaining the primary data for analysis, the study used two research methods. The first was one-on-one semi-structured interviews with the sampled firms' top managers in order to derive their perception on the topic, and thereafter focus group discussions (FGDs) were conducted with employees to obtain their views on the related questions in order to establish validity on the information collected from the managers, but also to realize additional information where it existed.

5.3.2 Population and sampling

Using Tanzania as a case study for early-industrializing economies, firms in three regions in Tanzania – Arusha, Dar es Salaam and Mbeya – were used as the population, selected for major two reasons. First, they are among the five existing cities the country, and from which the World Bank enterprise survey was based on to create the TESS, the dataset utilized in the previous chapter of this study. The selection of the regions then targeted consistency and a chance to interpret integration room the study findings across chapters. Secondly, the three regions accommodate significant number of firms in the country, having approximately 31% of the total number of firms in the country (United Republic of Tanzania, 2016).

Matching with the secondary data used in the quantitative analyses of previous chapters, designing the population for the field study considered three key criteria: firm performance level, sector and size. For the first criterion, which focuses on the performance level of the firm, the sampled firms were divided into high-effective and low-effective firms, determined by their sales level in the market. Again, to create consistency with the previous chapters, the determination of high performers and low performers was led by the median sales value from the secondary data used in previous chapters. The sector and size of the firms has been incorporated not only for consistency purposes, but also to create more variance in the two groups of performers and to accommodate unobservable factors which cause fixed effects on the firms' decisions (Scheaffer, Mendenhall & Lyman, 1996). In this regard, the firms were divided in two major categories, manufacturing and non-manufacturing, while the definition of firm size in Tanzania has been used to categorize the population into two groups: those with less than 20 employees were categorized as small firms and those with 20 or more employees as large. The basic requirement for all firms included in the study was to be formally registered, and if not they were automatically excluded from the population.

Since firms that meet all the criteria required are often hard to identify, especially with regard to performance criteria which is sensitive information not always willingly shared by firms, the association of industries in Tanzania was engaged in the fieldwork to provide a guide. The Confederation of Tanzania Industries (CTI) was selected among the existing associations since it has over 400 members, ordinary and associates, cutting across all the criteria identified countrywide. The association provided their knowledge and support and assisted in clustering their members according to performance level, sector and size of the firm. This is referred to as systematic sampling since the clustering keenly observed the pre-determined guides. However, since the identification of criteria for clustering was strategically undertaken, it is referred to as theoretical sampling. From the clustered groups which match all the criteria, the final sampling undertaken was random.

From the selected firms, it was necessary that the interviewed manager had been in the position for at least two years, and for cases where the owner was interviewed, activeness in the firm activities was a mandatory factor. This was made possible with the assistance of CTI regional managers who deal closely with the firm managers. Purposive sampling was employed to obtain respondents that fitted the research. The key inclusion criteria for the employees included in the FGDs was that they had been on training before, regardless of their gender, age and experience at work. However, the later factors, that is, gender, age and experience were considered to create diversity in the discussion. In this case, both purposive and snowballing sampling techniques were used.

5.3.3 *Sample size*

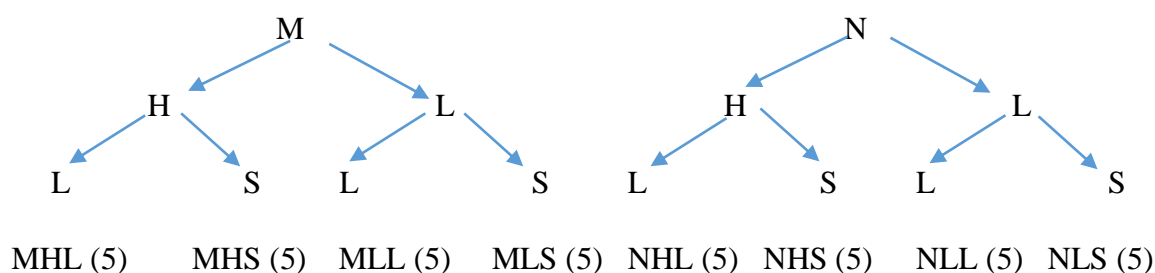
5.3.3.1 Interview samples

In determining the optimum interview sample size for qualitative study, it is important to take into account that there is a point where there will be diminishing returns on the information you will obtain with further samples. This point is mostly referred to as saturation point (Glaser & Straus, 1967; Mason, 2010). The main consideration when analysing qualitative data is to be able to identify a code, and not necessarily the frequency of occurrence, since the information obtained in the analysis is meant to obtain a meaning on a certain situation under study and not to generalize the results (Mason, 2010). However, it is not easy to determine the saturation level before going to the field, and hence the sample size for this study was still initially planned (Guest, Bunce & Johnson, 2006). From their literature background on their study, Guest *et al.* (2006) report different research groups which provide guidelines on the

sample size to be used. They hold that the sample size for qualitative research should not be lower than 15. However, in their study they interviewed 60 respondents to determine the saturation point, and managed to get 35 out of 36 of their total codes by the twelfth interview. In their conclusion, they suggested that, for homogeneous groups, at six interviews the elements for meta-themes would be present. Mason (2010) went further with the search into the most convincing sample size by doing a content analysis in the PhD studies done following qualitative methodology. He found that for those studies which proposed to do content analysis, the mode number for the sample size was 30 and mean 28, and for those which did qualitative evaluation, the mode was 42 and the mean was also 42. On average, different kinds of studies reviewed had a mean sample size of 31.

These findings were used as a base to determine the optimum sample size for the current study. Nonetheless, as mentioned by Guest *et al.*, (2006), the sample size considers the fact that same set of questions will be used in all interviews, the information that is expected to be found is not discrete to the respondents who will have enough knowledge on the subject matter, and the sample size will be determined for each homogeneous group. Therefore, initially the proposed sample size is a total of 40 firms as described below (see Figure 5-1) assuming that the distribution of the clustered firms is equal.

Figure 5-1: Sampling design and sample size



Where: M is manufacturing firms and N is non-manufacturing firms,

H is highly effective firms and L is low effective firms,

L is large firms, and

S is small firms.

The reality in the field was different. CTI had 452 members by the time the fieldwork was undertaken, of which 45 were ordinary members who are in the company profile and the rest were associates. More than 50% of these members were either MLS or NHL. This was explained by the CTI representatives as the existing pattern among their members, and so among firms within the country. The profile of the members is briefly described in Table 5-1.

Acknowledging the percentage composition of members as a reflection of the country's context in terms of distribution of firms, the decision regarding the number of samples for each cluster adhered to the respective percentage representation within the population.

However, the saturation level was reached before interviewing all the managers in the sampled firms. Since the analysis was conducted as the fieldwork continued, it was later realized that, for each cluster, on average, 95% of themes were already established before conducting the last additional interviews, which were meant to realize any additional information. It was observed in the MLS and NHL clusters that the themes were quite dispersed and different firms had different perceptions of the training agenda, which caused a higher saturation level compared to the others. This raised an interesting point: that the fewer the firms within a homogeneous group, the higher the possibility that they have similar perceptions on how they run their businesses.

Table 5-1: Population profile, sample and saturation level according to cluster

Cluster	Population (%)	Sample	Saturation level
MHL	0.1	4	3
MLL	0.125	5	3
MHS	0.05	2	2
MLS	0.3	12	11
NHL	0.25	10	9
NHS	0.05	2	2
NLL	0.05	2	2
NLS	0.075	3	2
Total	100%	40	34

Note: The respondents in the analysis (managers' perception section) were named with respect to their cluster, and numbered uniquely. For example, in MHL group were respondents MHL1, MHL2, MHL3. The same identification system was used in other groups, for example MLL1 to MLL3, MLS1 to MLS11, and so on.

5.3.3.2 FGDs sample

With regard to selecting the sample size for the FGDs, most studies which were done using this method are also not clear on how they decided on the number of FGDs and the number of participants within each group (Carlsen & Glenton, 2011). Hence for this study, together with

taking a note on the saturation point which is discussed in the literature, the planning of FGDs considered the context of the regions in which the firms operate and the representation of each group as specified in the sampling design presented. Since there were three regions to be included in the field study, a total of three FGDs were planned, with eight participants representing each group of the interview respondents as per the design. The selection of the FGD participants was purposely performed for the study to benefit from respondents who were well informed on the subject matter. However, as discussed in this sub-section, supported by other qualitative studies, the saturation level of the FGDs was reached in the second group. Most of the information provided in the second discussion was repetitive, where at least 90% of the themes had already been covered in the first discussion. The profile of the participants in the two groups is presented in Table 5-2.

Table 5-2: Profile of FGD participants

Code	F/Sector	F/Size	F/output level	Age range	Work experience (years)
FGD1R1	M	S	S	18 – 35	4
FGD1R2	M	L	H	35 – 45	8
FGD1R3	N	L	H	45+	14
FGD1R4	M	S	H	18 – 35	3
FGD1R5	N	S	S	35 – 45	6
FGD1R6	N	S	S	18 – 35	5
FGD1R7	N	L	H	35 – 45	12
FGD1R8	M	L	S	45+	26
FGD2R1	N	S	S	35 – 45	9
FGD2R2	N	L	H	18 – 35	7
FGD2R3	M	S	S	18 – 35	4
FGD2R4	M	S	H	35 – 45	7
FGD2R5	M	L	H	18 – 35	3
FGD2R6	N	L	H	45+	17
FGD2R7	N	S	S	45+	8
FGD2R8	M	L	S	18 – 35	2.8

Where: Sector - M is manufacturing, N is non-manufacturing

Size - L is large, S is small

Output - H is high, S is small

5.3.3.3 Final argument on sample

Together with the saturation level that was reached around 34 interviews and 2 FGDs, the argument of Romney, Weller, and Batchelder (1986) that even a small sample can generate a high degree of confidence on the study was observed. The interviews involved the top management of the respective firms, either the owner of the business, managing director, director of human resource, or senior managers. The FGD participants were employees who had at least three years of experience at work and had attended training before.

5.3.4 *Data collection*

As explained in the previous section, interviews with the managers and employees were conducted to obtain the required qualitative data, as briefly explained in the next paragraphs.

The managers' interviews were guided by semi-structured face-to-face interviews. The formation of the interview guide was based on the empirical and theoretical literature, and focused on the areas that would assist in addressing the established dimensions of this chapter. The interview questions had four major sections as seen in Appendix F. The first section was intended to obtain the basic information of the respondent and its firm with respect to the criteria discussed on sampling. The other three sections were the key ones, intended to investigate internal factors, external factors and willingness to change through open questions. All the interviews were recorded after obtaining the consent of the interviewees and they took on average 35 minutes each. The interviews were conducted at the respondents' office premises for their comfort, but also to allow the researcher to relate to the environment of the firm and partially validate the information given, particularly on the size of firm, sector, and output level. Before the interviews the respondents were given the background of the study and what was expected from them as displayed in the interview guide in Appendix F.

The FGDs were also guided by semi-structured questions to lead the respondents on the information expected from them. Since one of the motives behind conducting the employees FGDs was to confirm the information obtained from managers relating to the matters that directly affect the employees, the discussion was also guided by the responses obtained from managers' interviews. Hence, together with the discussion guide questions that were already formulated (see Appendix G), probing questions were used to lead the employees to discuss the managers' responses. The group discussions in all the regions were conducted in the hotel conference rooms for two major reasons. First, the participants came from different firms and

it was not possible to conduct the discussion in one of their office premises. Secondly, the participants needed to feel comfortable to respond to research questions without being worried that their leaders in the office would follow up on how they responded during the discussion. In addition, the conference rooms in the hotels had basic requirements for group discussion, which made the whole process effective. In average, each group discussion took one hour and forty-five minutes. As was done in the interviews, the discussion guide presented in Appendix G was followed where the basis of the research was explained to the participants, what was expected from them and the need for their consent before proceeding. Together with noting the raised points in a notebook for comparability during the analysis, the discussions were tape-recorded.

5.3.5 *Data analysis*

There are multiple existing qualitative approaches, and these are often complex and with shades of meaning (Holloway & Todres, 2003). Amongst these approaches, studies have mentioned thematic analysis as the base of the qualitative analysis (Braun & Clarke, 2006). The method is not attached to any theoretical arguments, which gives flexibility for the researcher to obtain not only rich information, but also with depth and complexity for wider grounds during the analysis. This supports adaptability of the method in different theoretical frameworks, especially those intending to establish themes and sub-themes from the datasets.

‘Theme’ can be defined differently, but with common understanding. In their study, Braun and Clarke (2006) defined theme with respect to its role, that is, capturing the key information about the data while linking it to the research question. They explained that it amounts to the observed pattern of response, which has meaning in relation to the question. The current study adopts this definition as the development of themes continued. It is important to note that a theme was developed neither with respect to the proportion of the dataset which evidently supported it, nor by quantifiable measures: the “keyness” of the theme was only determined when it represented the information which answered the research question.

When thematic analysis is employed, there is no formula for establishing themes from the dataset, however, the consistency on how it was undertaken was observed in order to obtain reliable findings. There are two known ways of identifying themes from the dataset, which are also used in the coding process. The inductive approach, also known as the bottom-up approach, has been employed in a variety of research such as in the work of Frith and

Gleeson (2004). The deductive approach, also known as the top-downs method, is normally guided by some theoretical grounds that guide the coding process (MacMillan, 2005; Ryan & Bernard, 2003). The current study employed both inductive and deductive approaches. Although the analysis commenced from the established base guided by the empirical and theoretical support, the coding was manually conducted in the process to filter out themes raised during responses using Microsoft excel software. In the end, the thematic analysis undertaken not only supported the existing theories, but extended the existing theories from the new themes highlighted. This is because, the process of identifying themes require the researcher to interpret the responses while observing patterns, which is not descriptive work but theoretical (Braun & Clarke, 2006).

5.3.5.1 Analysis guideline

The study adopted the guideline discussed by Braun and Clarke, (2006) as a step-by-step guide in the analysis as briefly explained below. The procedure was adopted to analyse both managers' interviews and the FGDs.

Table 5-3: Thematic analysis guideline

Analysis Step	Details
Familiarization with the data	In this step, the main objective is to read the data with the intention of searching for meanings and patterns. The entire dataset is read at least once before the coding process begins. In this way, immersion within the data is achieved.
Generating initial codes	In this step the data is organized in meaningful groups through a coding process (Tuckett, 2005). Different approaches are employed in this process, theory-driven and empirical-driven, where often the researcher has the question in mind, but also figuring out codes directly from the raw data. As mentioned earlier, this employs both inductive and deductive approaches.
Searching for themes	After generating codes and code groups, themes are determined. Braun and Clarke (2006) pointed out in this step that some of the initial codes will become themes by themselves, and others will emerge from sub-themes, also

	referred to as code groups. Some of the developed codes may be discarded in this step if they do not link to the research question. What is obtained at this stage is referred to as candidate themes, and all the details, including the codes which did not get specific themes, are grouped together for potentially be used in the later stages.
Reviewing themes	This step reviews and refines the established themes. In the first stage, the coherence between themes is observed at the extracted code level. This assists in combining themes that represent similar information. The second stage is to ascertain whether the themes link to the dataset, observed in code level. In this stage, any identified data not coded before is also placed within the related themes.
Defining and naming themes	At this stage, the themes are defined and further refined, identifying the essence of each theme individually and together. This process also determines what aspect of the data each theme captures and the answers they provide to the research questions. In this step, the analysis is undertaken by giving the story from each of the final themes and making sure it links to the big story the study is building, while interlinking each other.
Producing the report	The final stage is the write-up, making sure the story is concise, logical, coherent, non-repetitive and interesting, while interlinking the stories within and across themes. When presenting the analytic narratives, the observation is done so that they do not become descriptive, rather arguments in relation to the research question.

5.3.6 Ethics

The qualitative research followed the ethical requirements of the University of Stellenbosch. The application for ethical approval was done and the ethical committee granted permission for the researcher to interview the managers and employees in Tanzanian firms with support from the CTI. After obtaining the permission, the researcher provided consent forms to all the

respondents before the interviews as seen in Appendix H. The consent forms were signed and after the data collection, the confidentiality and anonymity of the respondents have been highly observed as ensured. The participants were given the chance to freely withdraw from the study if they felt uncomfortable, even after signing the consent forms.

5.4 Results and discussion

A number of factors determine the average training effect as reflected in the firm's productivity and profit return measures, recalling Chapter 1 of this thesis. In Chapter 2, the analysis focused on the existing difference in training needs and supply and its impact on training effectiveness, among key factors that explain when and how the training can work. This chapter investigates other key factors, which could not be addressed in the previous chapters due to the limitation of data. Following the methodology for this study, the analysis was performed in eight homogeneous groups within the sample to understand the existing variation across the firms from the perspectives of both managers and employees.

5.4.1 Managers' perspective

As guided by the existing empirical and theoretical literature, the investigation for training effect variation within firms was observed through firm internal factors, external factors and managers' willingness to change, which also guided the data collection and the formation of datasets during analysis. Following the thematic analysis guideline discussed in the methodology section (Section 5.3), and considering the built datasets which accommodated the topics of interest and the homogeneous pre-identified groups, five major themes were constructed following the developed codes and group codes (see the Codebook in Appendix J). The discussion of the respective themes intends to answer the major research question of this chapter: what causes the training effect variation across firms' performance? As a guide during the analysis this question has been subdivided into the following questions:

- Does the variation exist across firms?
- Do training policies significantly differ?
- What are the success factors for training effectiveness?

The other sub-question to be answered during the analysis is: what really determines firm performance across firms, a view of managers' role and external factors? This is also divided into small two questions for easing of analysis:

- What are the managers' perspectives on change within their firms?

- Do the external factors influence the performance of firms differently?

In addressing these questions, section 5.4.1.1 discusses each of the developed themes.

5.4.1.1 Existence of variation

Under this theme, the interviewees' perception was observed to determine if there is variation across firms. From the managers' responses, the triggers on training effect disparities were observed from the developed code groups. This includes the perception on the necessity of training for their daily operations, the frequency of employee training, the concerns they have towards training their employees, and how differently they perceive the benefits of training within their respective firms based on the extent and type of acquired effect.

Necessity

Despite the very few managers from manufacturing sector group who indicated that training is not important in the performance of their firms: *"not really, our business doesn't require a lot of training"* (MHL1), training has remained an important and effective human resource development strategy for strengthening human capital and creating a unique resource for firm competitiveness. This has been confirmed from some of the responses where the managers expressed that they do not see training as key for their business but their answers still suggest they train their employees. For instance, MLS1, who said the *"process is not complicated; one engineer who designed the machine trained two local people who are training the juniors"* suggests that despite the fact that they do not acknowledge the necessity of training formally, the firm still values the contribution of training in their employees' performance.

However, most respondents agreed on the necessity of training regardless of their sector, size and productivity level. The respondents from the non-manufacturing sector even highly support having a training policy in their firms since their business strongly requires competent and unique human resources to remain competitive. From the responses, it was observed that these firms made the training requirement formal within their company's strategic plan and gave their employees an equal chance to receive training as observed in this response from one of them: *"Yes, we have training policy, we value training for our operations...it is our number one priority when managing our employees. There are regular trainings which are every day, here supervisors train but also as a manager I train, one on one when needed and group trainings as per department. Sometimes we also invite external trainers where necessary for some of the topics"* (NLL1).

Frequency

Although the majority of firms have training policies, less than the average have frequent training for their employees, and that determines the extent of the effect and how long the effect lasts taking into account factors such as employee turnover. Of the eight groups that were analysed, three displayed frequent training from their policies: MHL, NHL and NLL. The first thing noted in common for these groups is that they have more than 20 employees, which means that these firms are labour intensive. The second thing is that two of the groups are non-manufacturing, which means they are selling services, and frequent training for their employees is very important, sometimes mandatory as mentioned by one of the respondents;

Our principles here ... per year every employee is supposed to have not less than 40 hours of training, whether internal or external training. There are mandatory topics, which are a must ... I mean every employee has to do those trainings. It is also allowed for employees to find own trainings anytime but they have to justify why should they attend those trainings and which benefit will it bring to the organization. And of course when they come back from attended trainings they have to train the other who didn't attend. (NHL2)

It was also observed that the highly productive firms are the ones which have frequent training. A number of empirical studies as a limitation for cross-sectional data studies has raised this concern of causality. While the effect of training has been viewed from one direction towards firm performance due to limitation of data, it has often been speculated that there is a possibility for highly productive firms to have more ability to afford training investment than less productive ones, since training is costly. This has been reflected in this analysis where the majority of firms which encourage and implement frequent training for their employees also have larger revenues. For instance, when the manager from NHL3 was explaining some of their training, the cost behind could be witnessed:

Yes we have serious training policy, part of it we specialized it and call it operational excellency, green belt and black belt which are problem solving techniques, few companies have implemented this type of training like Toyota, Ford and they have great reputation, it's really special kind of training ... the trainers come from New

York and London, very big training institute and they come train us in in our company premises and monitor our projects when they go back.

Concerns

Management's concern over the firm's return from the training investments has been raised in variety of studies. A number of seminal works evaluated the effect of training on employees return, mostly measured by wages (Bartel, 1995; Parent, 1999). The effect of training on firm return is another group of studies on the related topic (Arthur, 1994; Bartel, 1994; Black & Lynch, 1996; Huselid, 1995) while others analysed the training effect for both workers and the firm to establish the share of rent among them (Bishop, 1994; Blundell *et al.*, 1999). Among the arguments that built the foundation of the studies was the existing concerns on who benefits from the training investment, the employees who might leave the firm, or the firm that invested its resources. However, the root, as explained by the managers who responded in this study fieldwork, is on the fact that the employee can leave the company any time: *"as the owner I equip myself with most skills and knowledge and I share with them often. We tried to train people but they left immediately and it's discouraging, employers have to be protected"* (MLS5).

This is not a new management distress. It has been raised in previous research, and the responses from the interviews confirm its existence especially for developing economies where financial resources are even scarcer and labour turnover is a threat. This was witnessed from MHL1's response: *"there is no competition in the labour market, people have a mentality that if am fired today I will get another job easily"*.

From the analysis, the small manufacturing firms are the ones that reflected a greater fear of employee turnover since they normally employ unskilled labourers and train them on the product they are manufacturing. After they become competent, they sometimes leave the company and go and open their own businesses: *"some of my employees open their own offices after benefiting from my trainings"* (MLS8). However, most large firms that are highly productive did not express so much concern about employee turnover. This was not because the employees do not want to leave their firms, but they try to make their employees stay by giving them extra benefits since they had already invested a lot in them. This was well observed from NHL1's response on the matter: *"our employees turnover is low, I can tell you*

we treat them very well, we give them house and car loans, and pay them so well ... as people who work in big famous companies”.

Contribution

The variation of training contribution within firm performance was expressed and analysed in two ways. The first code group was the extent of the training effect with respect to performance quantifiable measures such as sales and profit. The second sub-theme is the type of the effect based on the nature of the expected output.

○ Extent of the effect

The managers answered the related questions on the quantifiable effect and their responses were classified into strong, minor and average contribution. Regardless of the split groups in the datasets, the majority of respondents shared that training has a significant strong effect on firm performance through the employees’ productivity. For instance; NHL3 mentioned that *“because of training we have reduced the penalties we were getting from 1.5bn to 50mil this year which were caused by the mistakes we were making for lack of skills”*. That could not be overemphasized by respondent NHL6 who said *“honestly, training has significant contribution on our firm financial performance since we are selling service; Oh ... I cannot imagine how we could run our firm without training, am telling you we will never be able to sell our service, it is just impossible”*. As mentioned, not only non-manufacturing firms who have experienced strong effects from training, manufacturing firms also do as can be witnessed in this response from MLS3: *“training play a bigger role to make our employees competitive, we cannot afford to keep a machine supervisor without training, the outputs from the machines is our business. No production, means no business ... simply”*.

It is still important to highlight that not all the firms expressed a strong positive effect from training. The minority group shared that training has minor to average effect on their operations, which was mostly linked either to the observable training success factor as defined in this chapter or to the necessity of training. As speculated, those who mentioned that training is not important for their firm declared the minor effect from the conducted on-the-job trainings. For example, MLS1 when asked for the existence of a training policy in their firm answered: *“listen ... the process is not complicated here, one engineer who*

designed the machine trained two local people who are training the juniors when they join the firm, we do not need any other training". Although the respondents did not agree on having a training policy, from the response it can be observed that training is necessary for their operations. However, the same respondent gave a simple straight response when asked about the contribution of training in their firm and said "*training does not have significant influence on our company performance, not at all*". This response reveals that having competent employees does not always determine firm financial performance, they might make a contribution but factors such as manager's willingness to change and external factors have higher significant contribution. Nonetheless, different firms have different strategies towards their competitiveness: while some give human resource crucial attention, others focus strategically on either capital or management resources as mentioned and discussed by Barney (1991). The later resources, however, are not further investigated in this chapter but remain as interesting areas for further research

Apart from those who do not agree on the necessity of training, there is a small group who agreed on the necessity of training but who still do not derive a strong contribution from the training already conducted towards their firm performance. This group presented different claims, one of which was the mismatch of supplied training content to the existing skills demand. This reflected the argument made in the previous chapter of this thesis where the importance of matching the training needs and supplied training could not be stressed further from the findings obtained. MLLS11 said: "*you see ... our firm get most of its trainings from donor funded projects, who come with their preferred topics, honestly, they are not helpful since the supplied knowledge is not what demanded. If you teach me entrepreneurship and I need technical training, it won't help*".

This agrees with the arguments raised by a number of theoretical and empirical researchers including Noe and Colquitt (2002) who presented a clear theoretical argument on how after-training environment can determine the effect to be obtained. Interestingly, all of those who expressed this concern fell into the small manufacturing firms' category. Since they are open to learning new things, particularly when they relates to their line of business, they do attend training which is mostly fully sponsored. However, the concern of how that knowledge will be converted into practice after the training is completely left to them, as shared by the respondents, which becomes a challenge especially when more resources apart from human resources are required.

We really want training in our firm, and we always make effort to attend when the chance is there although not much, you see they tell our leaders that there is training, we arrange things here in the office and go. But am telling you ... the training obtained does not have much effect to us; we don't have capital, we need those machines they show us, but where do we get money to buy them ... so we end up doing what we can. (MLS6)

Training intensity is one of the common training measures which have been used in different empirical quantitative research, including this thesis. One of the respondents raised the issue of intensity level as a determinant of the materiality and magnitude of the training effect in their company: *“the company's performance has not being highly impacted by trainings conducted first because very few people have received trainings”* (NHL9).

- Type of effect

Most of the empirical research uses quantifiable measures when defining the firm performance variable in related topics. Sometimes the findings suggest that training did not have a positive effect on the firm's performance because the results reveal a negative direction, or insignificant effect magnitude from training. While acknowledging the limitation of the research, for instance the issue of data, it is logical to report the suggested findings as is. However, the performance is not only revealed through the productivity and profit return measures, but also in the non-quantifiable return which also contributes to the firm's performance, either directly or indirectly. Some of the firms are concerned with the firm financial figures when they train their employees; however, others have different intensions as can be seen in Figure 5-2. It is important to highlight that not all of these benefits occur to all firms, and their impact on firm performance varies depending on the view. For instance, while company brand and standards were seen to be more important to manufacturing firms, the positive mindset and confidence of the employees was perceived to be a great added value for the non-manufacturing firms since they deliver services.

Figure 5-2: Types of training effect

5.4.1.2 Features of training policy

The majority of managers agree that they have training policies in their firms; however, they work in different ways across firms. Some of these features are what are referred to as unobservable factors when one evaluates the effect of training on firm performance (Souitaris, 1999). In this subsection, the observation was done on the variety of forms of training and the process towards the training act, that is, need assessment.

Forms of training

When firms agree that they train their employees, it is important to understand that the forms of training employed are different, despite the common situations to be addressed (see Figure 5-3 below). The existing differences determine the effect of speed and/or timing on employees' productivity, and the magnitude. For instance, the effectiveness of one-on-one training might be different to group training, especially when the needs to be addressed are

more individual than a group, whether the training is internal or external, specific/job-related topic or general, e-learning or classroom. Moreover, as one of the managers responded, one-on-one training is effective for very weak employees since the person gets more attention and is easily accountable on the training they received *“one to one training is used in exceptional situation and it works especially when that person has other personal issues which hinder their performance, they need extra attention”* (NHL1).

The issue of seriousness and learning attitude is also noted in different forms of training. Most of the training where there is no direct contact between the trainee and trainer, and those where someone's honest participation cannot be confirmed, are viewed as less effective. The manager from NHL6 said, *“even the management we are aware of this, as much as we think E-learning is an easier way to give everyone a chance to receive training on what we believe are key issues in the operation like soft skills, it's sad that they are not taken very serious and so they are not very effective as oppose to the classroom trainings. We understand that our employees just do it to show that they have done it because its mandatory but they just click next next next”*.

On-the job training was also mentioned by a substantial number of respondents when they explained the forms of training they provide to their employees:

As the owner I got training from SIDO, they are professionals ... then I trained my employees, I cannot afford to take them for trainings ... otherwise its free and we are not very busy here, you know we have our seasons. (MLS9)

This type of training can be grouped under less financial costly training since there is no cost involved in terms of paying the trainer, and the trainee can continue working while receiving the training. They are mostly facilitated by senior colleagues or managers who had already attended similar training before. From the field respondents, the respective training was mostly observed from the group of manufacturing, small enterprises (MLS). This confirms their financial affordability and suitability for firms with few employees where the opportunity cost of allowing employees to attend training out of work is seriously considered. However, the effect of on-the-job training might be different to the professional formal training. In the latter, the possibility is that the employee is more focused and becomes more accountable, and the trainer is more expert and has better techniques to transfer the required skills and knowledge.

General training and specific training are among the categories of training and firm performance topic which has been well researched and argued, including in the theoretical work of Becker (1994). This distinction of training was also noted in the managers' responses where the majority of firms, regardless of their sector, size and output level, prefer job-related training to training on general issues. Some of those who mentioned conducting general training said that it was externally financed: *"most of our trainings are donor funded, so we do not have much say on training topics ... mostly they do general issues not much related to our work ... it doesn't work for now, really ... maybe later when the employees leave this place"* (MLS11). Others who conduct general training are consultancy firms where, together with their professional skills, having general skills and knowledge is important for their employees when dealing with clients: *Most of our employees are graduates and so once recruited they must attend training to commence the work. It involves both technical and soft skills like communication, work ethics, customer care etc. You know they have to attend both cause they play different role ... Example, good technical work will make you deliver what client want, but good customer care will keep the client, probably more client by word of mouth,* (NHL6). The specific and general training is mostly undertaken for different purposes and their effect on the employees' productivity and so firm performance should be differently measured or considered.

Figure 5-3: Forms of training across firms



Need assessment

Despite the fact that it was not very obvious to most of the interviewed managers, the unobservable factors, which was mentioned as limitations in most of the related literature, have a material contribution on the extent of the training effect on firm performance. This is among key dimensions that explain the effectiveness of firm training, although not easily captured in most analysis due to unavailability of data. In this chapter, the managers were asked about how they conduct need assessment and their responses led onto a sub-theme named “need assessment” which basically explains the process undertaken before the training moment.

Three major code groups were identified: how they select trainees, the selection of topic, and the timing of training. Figure 5-3 reflects numerous methods that firms employ when selecting trainees. Most existing literature on the related topic assume that employees are given equal chances for training across all firms under observation (Backman, 2014; Colombo & Stanca, 2014; Percival *et al.*, 2013), which is not always the case as argued by De Grip and Sauermann (2012). While some firms do random selection for trainees, others conduct biased selections by allowing their decisions to be led by either objective or subjective pre-determined factors. Some examples of subjective selection:

We understand our employees as our children, we know who to train to get more impact. (MLS2)

We use experience and loyalty to the company to decide who to go for training since other people leave after getting training. (MHL1)

We cannot expect somebody with minimal education to do high tech jobs, so training are given as per their education level, keenness, and motivation to learn. (MLL2)

However, other selections are objectively done: “often we select the person who is relevant in that training, but we also give priority to those who are less performing to improve their productivity” (NHS1).

Selection of topic is another code group that appears under the sub-theme of need assessment. The contribution of this category cannot be overemphasized taking into account the results obtained in Chapter 4 of this thesis. From the findings, the existed misjudgement on the topics of training to be facilitated resulted in non-significance for some of the training and hence no substantial effect on the firm’s performance given expectations. The managers raised a number of factors which act as references for them when selecting topics for training. Existing needs was supported by the majority of managers, and second was customers’ feedback, which was highly considered when selecting topics to train, particularly for non-manufacturing firms due to the nature of their business. Examples of the responses were:

Complaints from the clients determine which training we should conduct, you see we get some of our feedbacks from the reviews in the internet, social medias and platforms like that. (NHL8)

We check customers feedback, check the missing standards from the employees which affect our brand. (NLL1)

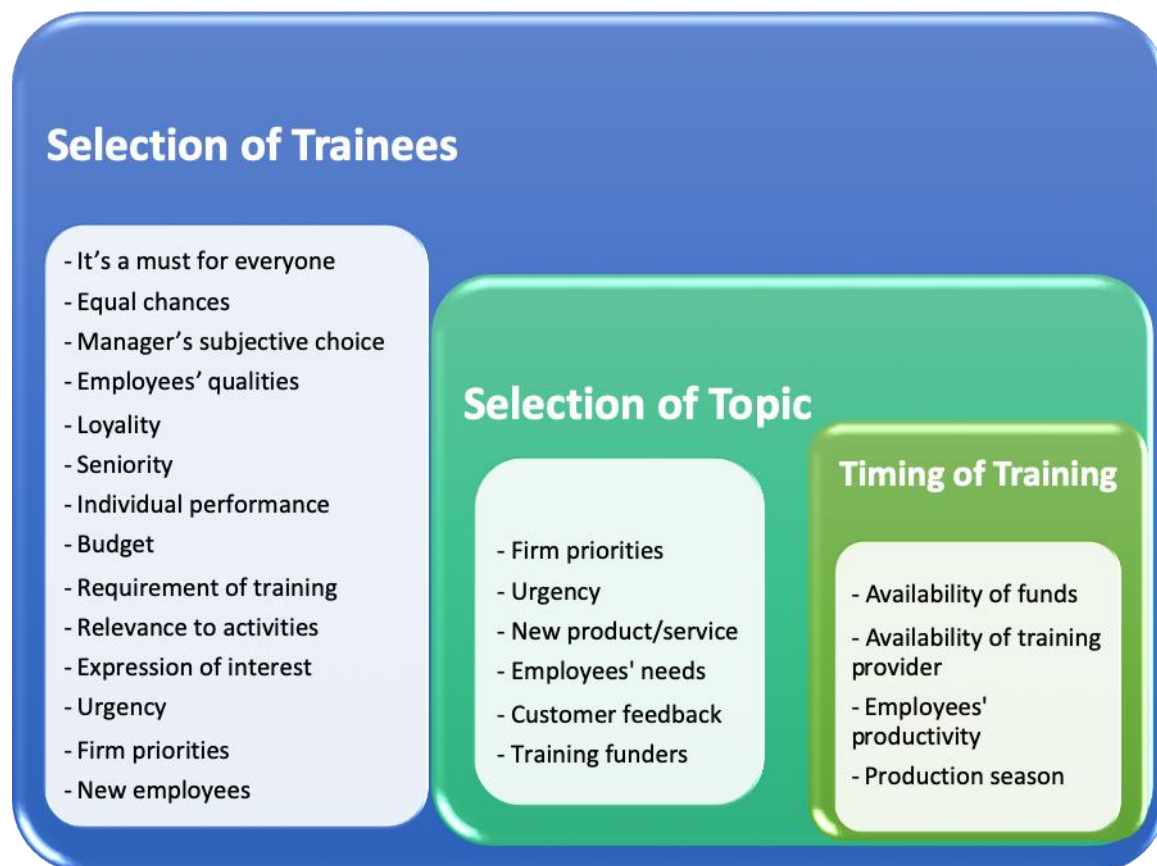
Each firm has their customized goal when selecting the topic on which to train their employees. Comparing the effect of such training using similar return measures might create biased results. The managers’ responses above show that, while some firms focus on employee productivity, others focus on building the company brand or satisfying their customers.

Another code group related to timing of conducting training. The timing for training differs across firms, with similar situations in a few cases. This is another important point to

consider when comparison is done among firms because not every timing is “effective” when viewing the speed of effect translation in relation to the urgency of need. While some provide training immediately when the employee joins the firm: *“Everyone who is join the company is needed to be trained first, it’s a must ... regardless of your background”* (MLS4), others wait until they can rely on an employee’s loyalty. Those who obtain training before commencing their duties are advantaged since they get to understand the company’s expectations and standards and grow within the process while employing the correct techniques. On the other hand, those who take time to be trained start developing and adapting to their own “normal” ways of undertaking the duties. When these people are later trained, it might be hard to replace the normality that they are already used to and so take time to readjust.

Some firms responded that they only train when funds are available to facilitate the training: *“trainings are expensive because we use external trainers so they go by department, and only when funds are available”* (NHL1). However, others train immediately when there is a new product or new technology introduced in the market in order to keep up with the speed of the industry: *When there is a new idea, innovation we conduct training. The training is done on rotation in order to proceed with work,* (MLS10). Although the former firm will train their employees on the “new product” when they obtain finances, comparing the training effect of the two firms at the same time is biased since there is a required time for the effect to be reflected into the return measures.

Figure 5-4: Need assessment



5.4.1.3 Observable determinants for training effectiveness

Taking into account the existing differences across firms' internal factors, for instance, training policies, employees' qualities, need assessment process, their perception of training and other factors discussed above, most of the respondents relate the effectiveness of training to a number of observable factors as seen in Figure 5-5. These range from employees' basic qualities such as education, experience and attitude, the addressing of existing needs from either employees or the firm itself, factors such as the mode of training used, and the emphasis that is put on training repeatedly to similar individuals or groups of trainees. Although not all of these factors contributed to the success of the communicated effective training, they do explain why some firms' training is more effective than others. For instance, some of the firms have employees who are very eager to learn but the modality of training are not supportive. Others have received enough skills and knowledge from training, but after that the environment within their firms were not supportive to yield higher returns from them, *"we received enough skills and knowledge from training, but we did not have enough capital to put into practice after that, unfortunately nobody cared to follow-up"* (MLS 6). This was in particular for the small manufacturing firms who received training as support from either government or donor institutions. Follow-up after training was a large challenge

according to the managers, and it determined to what extent the training would have an impact.

Among these success factors, the employees' qualities were a concern for the majority of respondents. This was defined through basic education, job experience or individual attitude. Majority of the respondents mentioned how the attitude of the trained employees has the biggest role in whether the training will work or not, despite other factors such as education and experience. The respondent from NHL4 gave this story about one of their employees;

We have an example of the employee who was uneducated and was among the janitors. He constantly showed the eagerness to learn on the things which were not within his job responsibilities. One day he came to my office and expressed his desire and career goals. Believing on his ambition and future dreams, the company sponsored him to obtain the needed skills, starting from the basic skills level and he continued to grow with time ... now he is a manager in one of the departments and he is doing very well. As the management we recognize his contribution in the company performance. Until today, he has the passion and morale to push to achieve higher while those who are educated are satisfied with where they are.

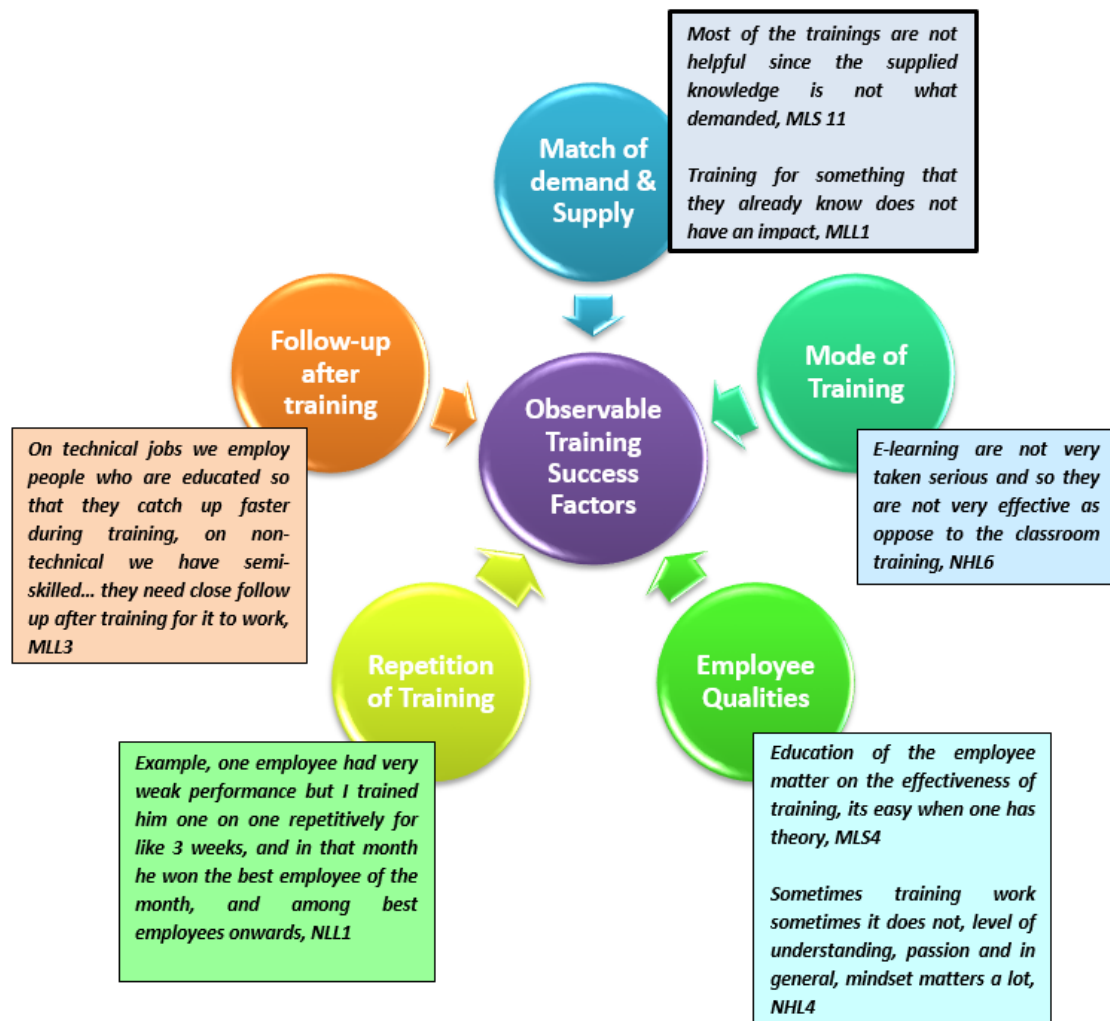
Although the majority supported attitude, education continued to be a key ingredient for those firms with very technical operations, requiring the employee to have basic education skills. In such cases, when training someone who does not have basic skills from their education background, the effect is more unreliable. Having a theoretical background was termed as an important quality for the employee to have. In their case, the majority shared that training was meant to familiarize the employees with company standards and ways of doing things, and to update their knowledge where there are new updates in the industry. Most of the respondents from non-manufacturing large firms attested to this. Having self-competent employees is key for the quality of their services. This suggests that, when the employees have no basic qualities required, the training they receive might not be as effective as supposed.

Does employee job experience play an important role in the success of training attended? Most of the managers related this to the seniority and the roles that one plays in the firm. It was perceived that the seniors' or managers' performance depends not only on the training they receive but also on the experience they have in the related assignments. This information adds to the body of knowledge since one will be able to analyse the senior employees'

training effect differently from juniors' training, particularly when a researcher needs to moderate the effect. The requirements for moderators of the junior employees training effect are supposedly different from that of seniors' training, although there are some commonalities for other success factors. For example, while among the seniors performance moderators the required attribute is experience, attitude might be the case for juniors, while education serves for both, as well described by one of this study's respondents:

Education and experience matters in performance, especially for our seniors. You cannot expect same performance from director or senior managers and junior consultant; after all they have different tasks in the firm which require different qualities. Attitude is significant for our new consultants, and that's how it happens on the ground, normally they learn faster because they are eager to learn, they go extra mile and it helps them to adapt to their new responsibilities fast. (NHL5)

Figure 5-5: Observable training success factors



5.4.1.4 Willingness to change

The firm can have well strategically planned and implemented training policy, however, its effectiveness and reflection in the firm performance depends on the managers' role to allow change;

Attitude

The first group code which was observed in this theme was the managers' attitude to change. This plays a bigger role, not only to allow change to happen as a result of the attended training, but also to initiate training where necessary. The majority of managers were strongly positive about changes which either resulted from training or led to training. For instance, the respondent from NHL3 said

Our industry is very diverse, and we change almost every day with change in technology happening in the industry, example last year we installed new system to control our towers all over the country although we had to retrench some employees, those remained had to be massively trained for the new technology.

However, while some managers perceived changes as unnecessary for their firm currently, others displayed a completely negative attitude, and yet others were just average, see Table 5-4 below. Interestingly, the difference in managers' attitude was irrespective of their firm sector, size or output level; it was more linked to individual personality.

Table 5-4: Managers' attitude ton change

Attitude	Example of quotation
Positive	<i>When we receive feedback from the person attended the training, we really want to know what they learn to improve the company performance, especially on the respective product which they receive training ... we not only positive for change, we can't wait for change, as long as it's for good. (NHS1)</i>
Negative	<i>Honestly, we do not know which change we need; there is only one way to do the job and no other way of doing it. (MHS1)</i>
Not necessary	<i>If we are successful, we may automate a lil bit, product is simple, I don't think it needs much change for now, it's not among our priority to change anything about our operations ... at least for now. (MLS1)</i>
Average	<i>We welcome changes, but not everything is taken on board. Management has to analyse and decide what to take what not to take. (NHL2)</i>

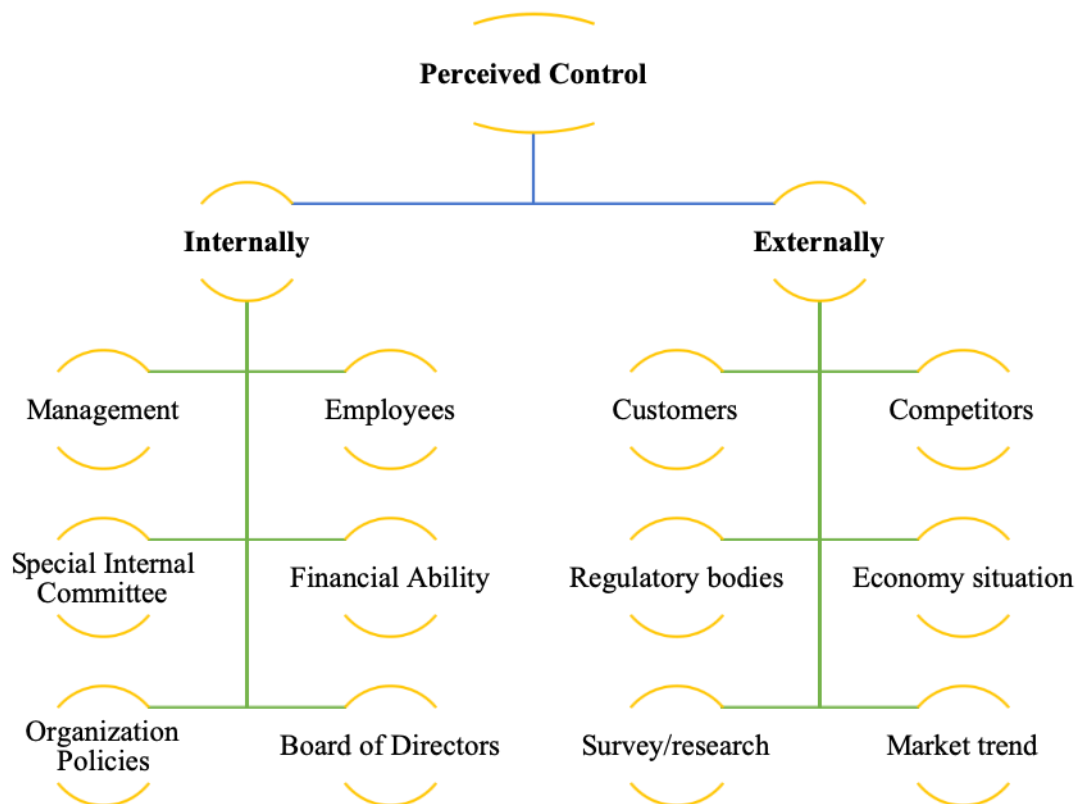
Perceived control

Sometimes managers might have a positive attitude to change, as was the case for the respondents in this study; however, their perceived control of change determines their consistency on emphasizing for change to occur. This group collected codes which reflect the parties or situations which have control in firms' changes. Some of them are internal and others are external, as seen in Figure 5-5. The management has influence on some of these situations or parties, and in other cases they have to adapt to what the other parties decide,

even when it is not positive for their firm performance, for instance government regulations which will be further discussed in Section 5.4.1.5. Most of the non-manufacturing firms were highly controlled by the external parties due to the nature of their business: *“We provide service, so our customers have an important say on the changes we should make. However, it depends if financially we can afford it”* (NLS1). However, the management still had much control for the majority of firms regardless of the nature of their business, size or financial position.

Yet the perceived control of changes was observed to have a contribution to the difference between firms. While some were perceived to be more in control with what they want to happen in their companies: *“As the top manager, I research any do the change I want to do. My research is both externally and internally, but am the final decision maker since I know my business more and I know what I want”* (MLS9), others responded that they had less control, *“if we do any change we have to consider what the competitors have in the market and what the customers demand”* (MLS3).

Figure 5-6: Perceived control of changes to happen within firms



5.4.1.5 External factors

The first three themes displayed firms' internal force towards training effectiveness and firm performance. The fourth theme presents the position of management to allow for change to happen by balancing both internal and external forces. On that respective theme it can be observed that a firm can have a strong training policy but still the reflection of its effect on firm performance depends on management's strategic positioning. Thus the performance of the firm depends not only on training effectiveness, but there are other factors which determine the final financial performance, which are mostly compared in the analysis. External factors determine the existing opportunities and threats which firms have to address to remain competitive in their industry. They play a significant role in determining firm flexibility and performance as seen in the groups below,

Industry trend

When discussing industry trends and their role in firm performance, managers shared a number of circumstances which are considered to play a significant role. Only one of them stood out as an opportunity, which was the export market, however others were termed as challenges for them in different ways (see Figure 5-6 below). The inner strength of the firm in handling the respective challenges is what differentiates firms' competitiveness and hence their financial performance. For instance, the majority of firms cite market competition as the biggest challenge. However, others perceived the competition positively "*competition is very high, but it's good cause it make us think further*" (NHL8), others even encouraging it further, "*it's a healthy competition, we are so aggressive, I love competition and it should be encouraged ... when we are many in the market it's good for creating more jobs, monopoly is not good*" (MHL3). However, others defined competition negatively for their performance, "*people like to copy businesses they assume others get a lot, so competition is very huge ... it's really affecting our sales*" (NHL1).

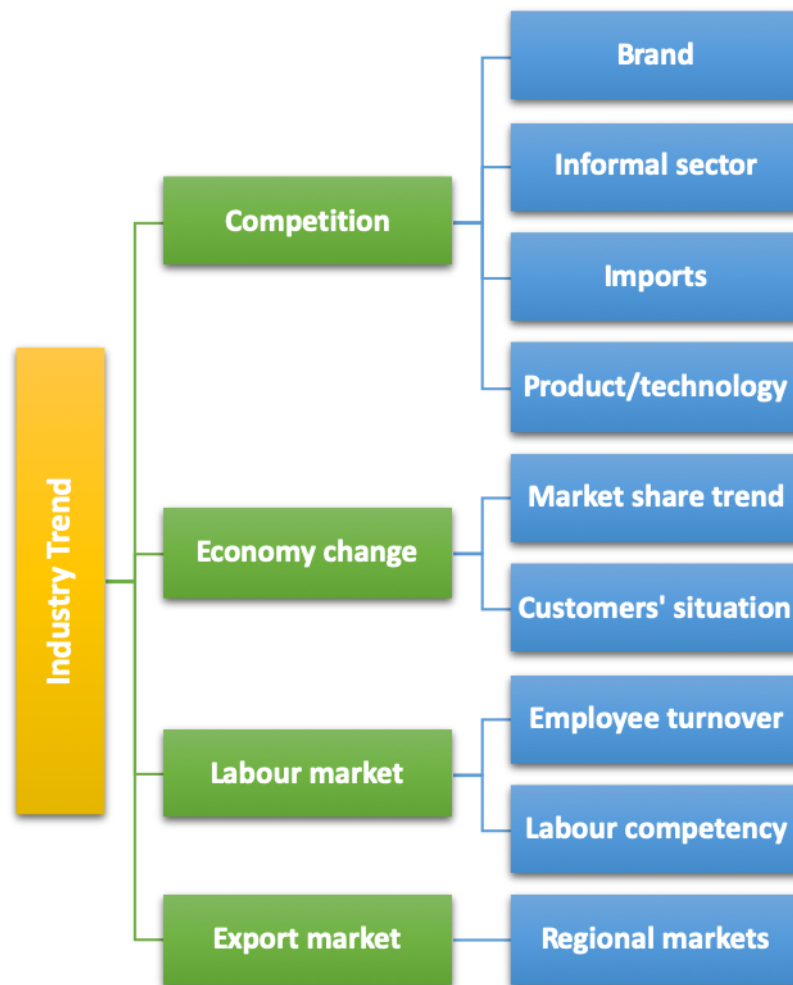
Discussing the effect of industry trend on the performance, most of the managers claimed that the situation is negative for their firm's performance. For instance, the importation of similar products from massive production firms is a threat for them in terms of price. Managers raised their concern that mostly they have to lower the prices of their products to keep up with the competition in the market since customers are price conscious: "*it does affect us, it does ... most people are price conscious and showroom owners manipulate the market and overcharge the clients*" (MHS1).

The fluctuation in the country's economy was also among the factors causing a negative effect on firms' financial performance, particularly businesses providing services. For instance, the hotel industry was observed to be more affected as a result of their clients being affected, *"although we don't face loss, but our revenue has dropped a bit due to sharing few clients existing"* (NHL7). Things are tougher for small firms that are still growing their muscles to compete and operate in all seasons of the economy.

It is difficult to compare the performance of these different firms, they are sometimes affected by different external shocks and the speed of their response to accommodate the shock is different due to their strength. While some have the financial muscle to take the risk of changing their internal structure to accommodate external shocks, others do not.

Even us we had to change our service structure to increase our customer base ... example to reduce procedures of obtaining the service, increase convenience of service provider accessibility, make it a little bit informal but still within the law, and so on. It was not easy, it was gradual change and costly, but now is more vivid. (NHL 5)

Some firms have already built their brand in the market and hence the loyalty of their customers helps at times, where competition is at its peak. Things are different for young firms, and comparisons should consider those dynamics.

Figure 5-7: Factors affecting firm performance under industry trend

Regulatory environment

In this case, the managers were led to talk about the support they get from the government in terms of regulations, laws and standards, to facilitate the growth of their businesses. Again, the intention was to understand how different firms are differently affected in this regard. The findings indicate that the majority of firms are not receiving the support they want from the government. The manager from MLS5 expressed the firm's concern on the respective topic, particularly with regard to taxes: *"the tax system is not logical, example being taxed through estimation before the business commence, it doesn't make sense at all, what if I will not obtain the revenue you are estimating. Some of the requirements are expensive like Efd machines, we cannot afford"*. It was not only the small firms which were concerned with the government support, the manager from NLL1 also shared this concern: *"every day there is a visitor from government who come with a new requirement on licenses, tariffs, taxes etc."*

which are too much, we share the revenue with government and we still have to cover our expenses". However, a few firms were happy with the support they obtain from the government, while others were neutral: *"I cannot comment much, there is no way we should not pay taxes however the SDL tax should come back to employers to assist in trainings which is not done that way"* (NHL4).

Mirroring the negative support which the managers claimed to receive from the regulatory bodies, the effect on their firm's performance was also declared to be negative by the majority. Firms expressed greater concern on how they were affected by the situation, some claimed that the effect is seriously bad to the extent of resulting in the closure of business: *"industries are closed because of taxes, we cannot afford, and if we pay we can't sell since the products will be too expensive than our competitors"* (MLS2). Others mentioned that it became hard for them to grow, *"we could double our exports but we cannot because of bureaucracy"* (MLL1). Financially stable firms also claimed to be affected by regulations: it was out of their control. For instance the manager from NHL2 said *"we lost a lot of revenue from losing government assignments just because they change policies, imagine how many clients will be able to contribute \$3mil which we could get from one project with the government, now we lost all government projects"*. Even their internal strength is sometimes not enough as was shared by a manager from a high productive firm: *"It affects the performance negatively. You may have competitive resources inside the company but if the regulatory environment of which we operate is not conducive, the bank is not positively performing"* (NHL5). Still there is a very small group which claimed to be positively affected by the regulatory environment, which is still among key factors which determine firms' performance in developing economies. Those who have more advantage in other factors are able to net off the negative force and manage to operate positively and increase their firm's performance.

5.4.2 Employees' perspective

In the FGDs, employees were led to discuss the training policies operating in their firms, their views on the effectiveness of the various policies towards their productivity and hence firm performance, and the role of managers in the displayed training effectiveness in their respective firms. The findings in this case are presented as confirming what the managers said in their interviews or raising factors that were not raised during managers' interviews or

where the employees had different perceptions. See Table 5-5 for the results which are presented according to the formulated themes.

Table 5-5: Employees views on the effectiveness of training policies

Theme	Employees' opinions	Quotation/researcher observations during FGDs
Existence of variation	<ul style="list-style-type: none"> • Training effect variation does exist in different firms as reflected in their performance measures. However, the variation of training effect is not only across firms, but also within a specific firm between different training programs. • Once the employees' needs are met, that is already counted as positive training effect even before the effect is reflected in the common return measures such as productivity and profit. The return on soft skills such as change in attitude, boosting confidence at work, and others count more for the majority of employees as inputs towards firms' expectations from the investment done. Sometimes, the materializing of the effect will appear later for parties outside the firm and so measuring the effect from their side might lead to biased conclusions. 	<ul style="list-style-type: none"> • During the discussion, one employee shared that they received a number of training courses to respond to the complaints they get from their customers and their performance has been improving, starting from the confidence boost when dealing with customers. By coincidence, some of their customers were in the same discussion group and they raised a heated discussion for almost 20 minutes on their dissatisfaction with the services they received from the particular company.
Features of training policy	<ul style="list-style-type: none"> • Similar forms of training which were discussed with the managers were also discussed with the employees. The majority of employees commented positively on e- 	<ul style="list-style-type: none"> • The need assessment process on external training was raised as a serious concern by the majority of employees who took part in one of the FGDs. One of the

	<p>learning courses which was different from how they were perceived by managers. For managers, e-learning cannot be mentioned among strong causes for effect variation since the control placed over the online courses make the employee concentrate.</p> <ul style="list-style-type: none"> • On the need assessment efficiency, employees raised two major points: <ul style="list-style-type: none"> – Although selection of trainees for other training was perceived to be fairly done, the concern was on the biased process for external training. This was related to the extra benefits involved in external training such as going to places out of office and allowances sometimes given. – The selection of training providers was raised as a crucial factor which contributes to the effectiveness of training, and so can explain the variation. 	<p>respondents said: <i>“these trainings I never trust if they are for the company, imagine you have to be greeting the boss every day and take tea to their desk to get selected for external training, no...no... ’ts so tiresome, I cannot do that, sooo ... end of the day those who are selected to go are the ones close to the boss even if the training does not relate to their work, how do you expect return”</i> (FGD1R5).</p> <ul style="list-style-type: none"> • And another participant said: <i>“for us it’s funny because the wife of the manager is the one attending almost all external trainings ... I wonder how can we also qualify in that level, (laughing), but seriously it’s so sad, external trainings are so political”</i> (FGD1R2).
Observable training success factors	<ul style="list-style-type: none"> • Employees’ qualities were raised differently by the participants when relating them to the effectiveness of training, and so existing variations. Although not in consensus a number of points were raised during the discussion: 	<ul style="list-style-type: none"> • The conversation on employees’ qualities went for more than 15 minutes for all the FGDs undertaken and the arguments were similar. Quoting a part from one of the discussion, the conversation went as follows: <ul style="list-style-type: none"> – <i>“Okay ... depends with field and field, maybe it’s</i>

	<ul style="list-style-type: none"> - Attitude depends with the field which training is based, others are too technical and needs theory background - Education enhance the ability of the trainee to understand during the training - Experience assist when training is in the same field • Important. 	<p><i>different for yours but for our company education really matters more than experience, it makes a person more open minded, you know... and see things which others cannot see ... cause they have the theory behind” (FGD2R4).</i></p> <ul style="list-style-type: none"> - “no no to me education no, it’s not a big deal. You find those with less education understand more than others, it’s just someone attitude so I disagree with you” (FGD2R7). - “Let’s not rotate, experience matters on my view. You may have basic quality but with no experience it’s hard, eg on marketing tasks ... my friend you need experience not just training, I really respect experience despite your education level ... you are better trained when you have experience” (FGD2R1).
Willingness to change	<ul style="list-style-type: none"> • Mostly, management hesitate to accommodate the change which comes with the training that the employees attend. Different reasons were given by the employees considering management’s response when they suggest change, or through observation: 	<ul style="list-style-type: none"> • When employees attending the FGDs were given a chance by the moderator to express their views on how to make the training more effective, most of their comments were directed towards the managers’ positions and acts they have to play to facilitate change.

	<ul style="list-style-type: none"> - Planned company budget - Cost of the change suggested - Expected investment return on the change suggested - Self-interest of the manager when they feel threatened by change - The relationship of manager and change initiator - Higher authority such as board of directors delay decisions - Less understanding on training content and what it brings to the company. 	<p>Below are some of their responses:</p> <ul style="list-style-type: none"> - <i>“I think management should be willing to discuss the proposed changes after training, otherwise it’s just a loss for them”</i>(FGD1R2). - <i>“For me I would say management should make training as a culture for someone to integrate in their routine and be prepared psychologically and prepare in advance, not just out of nowhere you have to attend training”</i> (FGD2R3). <p><i>“Attitude can be built by the management also, they should motivate people to love trainings and be ready to learn ... monitor it after trainings and make employees accountable”</i> (FGD1R7).</p>
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5.4.3 *Joint effect between the factors: complementary or substitute?*

In this section, the discussion of the result is undertaken to address the second dimension (see Section 5.2.2). Although in the respective dimension, the term “internal factors” was used, at this point “training effectiveness” will be used to refer to the concept, because the development of the first three themes, which relate to internal factors, portray the training effectiveness process from different angles and in combination towards firm performance.

Training effectiveness and managers’ willingness to change: These two factors complement each other. The transfer of training effect depends on the managers’ readiness to allow the change to occur within the operation. Manager’s willingness is playing a role of a moderator for training effect towards firm performance. The more supportive the managers are, the more effect can be realised. On the other hand, the management may be open to changes with the intention of improving the competitiveness of their firm through building their human resource (Barney, 1991; Wright *et al.*, 1994). However, the reflection of their efforts on firm return will depend on the effectiveness of the training process (Chi *et al.*, 2008).

Training effectiveness and external factors: While external factors can substitute the effect of training effectiveness in the firm performance, the positive training effectiveness cannot be realised when external factors are not supportive to the firm operations and hence performance. The results suggest that, for the developing country environment, external factors play a crucial role in determining how a firm performs regardless of the human capital strength they have. This implies that external factors can play both complementary and substitutive roles in training. They can complement the training effectiveness through a favourable environment that supports firm operations and sales, and they can substitute the training effect where some firms are performing well financially with weaker human capital because of their positioning in the market.

Managers’ willingness to change and external factors: In this case, external factors have stronger complementing and substituting effect. Managers might be ready to change and use their internal strength to position their firm in the market. However, external factors such as market trend, economy trend, regulations and others, were observed to have an effect on how the firm will perform. Managers’ willingness to change can also substitute or complement the external factors. Sometimes the external environment can be favourable, but if the managers are not efficient and quick to adopt change and capitalize on the opportunities, then the effect from the external environment cannot be translated into the firm’s performance in the form of

a complementing effect. In a different situation, the external environment might be unfavourable and push a negative effect on the firm performance. However, it was observed that when the managers have a strong attitude and strategically position their firm in the market and find ways to explore and utilize small existing opportunities while building their internal strength, then they can substitute the negative effect with a positive effect.

5.4.4 Training effectiveness as a process and as a contributor to firm performance

Most studies researched training effectiveness by observing the output resulting from the firm performance point of view (Aragón-Sánchez *et al.*, 2003; Ng & Siu, 2004). The assumption is that for the training to be effective it has to lead to positive results in the firm's performance. This is basically the ground behind most studies which research the effect of training on firm return (Percival *et al.*, 2013; Úbeda García, 2005). Other studies view the return from the employee point, or observe the productivity rate of the employees who have received training (Colombo & Stanca, 2014; Parent, 1999). The latter realise that sometimes the impact of training might be displayed from the employees' return but it might not be reflected in the firm's return. This is why some of the studies decided to view the training effect from both employees' and firms' return (Ballot *et al.*, 2006; Bishop, 1994; Konings & Vanormelingen, 2015). The point drawn from these highlights is that training can be effective even if it does not reflect a positive effect on the firm's performance.

From the findings of this chapter, it can be observed that not all firms that have increasing positive firm performance have effective training. This was the essence of investigating other factors such as external factors and willingness to change as determinants of firm performance. The effective training process is determined by variety of identified factors, which are mostly uniquely operated in different firms. Training is deemed effective when the changes which were meant to be observed through the employees when the training is initiated, are realised (Colombo & Stanca, 2014). However, this does not guarantee that the effect will be transferred to the firm's financial performance unless it is complemented by other factors such as those studied in this chapter. Nevertheless, this may differ depending on how one defines firm performance.

In this regard, research can be undertaken to realise if the training is effective or not, when observing the changes at the employees' level, since they are the ones who were trained. Researchers can view different variables that moderate the strength and direction of the effect towards skills change. This alone is enough to tell if the training was effective, and if not,

which variables explained the negative output. To what extent the skills change results in organizational and firm financial performance is another stage of the research. In that stage, the researcher needs to consider other factors that may complement or substitute the effect of skills change in order to make unbiased conclusions on the effectiveness of the training conducted .

5.5 Conclusion

This chapter investigated the factors that explain the variation of training effect across firms. Through the thematic analysis, the findings displayed five major themes which are key when discussing the differences among firms. The first theme is the existence of variation, which looked at the views of managers on the differences. Through their responses, the managers agreed that their firms differ on how they view the necessity of training for their daily operations, their views on the frequency of training, their concerns on the training investment, their commitment to the matter, and how they define the contribution of training. On the latter point, while some firms acknowledge the training contribution when they observe results in financial reports, others relate it to non-quantifiable returns such as customer feedback, employees' expertise and others, which in the long term will build the competitiveness of the firm.

The other theme that explained the variation from another pattern of response was features of training policies, which differed among firms especially with regard to the need assessment process. The observable determinants for training effectiveness which moderate the effect were grouped into another theme. This theme relates strongly to points that are given less attention but in reality determine how effective the training is. For instance, the mode of training employed, the employees' qualities, among others. The first three themes fall under what the researcher referred to as internal factors, and which explain the effectiveness of the training process. The willingness to change and external factors are other themes emerging from the analysis done. The employees' group discussions led to the same themes, however they strongly stressed the features of the training policy themes, particularly the need assessment process, and also the observable determinants for training effectiveness theme, especially on the employees qualities, as factors explaining the existing variations. The managers' willingness to change was perceived as the moderator theme on the extent of training effectiveness.

The discussion of the results brought out two major points worth taking further in future research and by the stakeholders who conduct training evaluations for particular purposes. The joint effect of the major three categories covered was observed with respect to the adopted methodology and addressing one of the established dimension. While it was expected that the internal factors, external factors and managers' willingness to change have a complementary effect towards firm performance, the interview responses suggested differently. For instance, the training process can be effectively performed, but according to employees, the managers can become an obstacle for the effect to transfer if they are not willing to change. On the other hand, managers expressed their concern with the external factors having either a complementary or a substitute effect depending on the situation. For the majority of managers, having stronger human resources is not a guarantee of performing well in the market, unless the external environment supports it. Sometimes, having conducive external factors was deemed as substitute for human capital when viewing the impact from the firm's financial performance. External factors have a stronger effect on the reported performance. The other key point raised in the discussion of the results is training effectiveness as a process, and training effectiveness as a contributor to firm performance. The two concepts need to be defined and so researched differently for unbiased results.

Although there are always limitations on the access and availability of needed data, researchers should consider the themes raised and attempt to include as many variables as possible to reach conclusions that are more reliable. Stakeholders, especially those investing in training, should also decide carefully how they would like to observe their return. Apart from only observing whether a firm's performance has improved because of training conducted, they should monitor whether the process itself was done effectively. It is important to differentiate between short-term and long-term returns. While some firms focus on immediate returns, researchers and training evaluators, especially those who report the findings to policy makers, should consider the fact that some of the human resource development investment is undertaken for long-term returns and their effect might not be reflected in the measures which are used in the short run. In this regard, comparability among firms, and so different economies at large, should be performed with caution.

CHAPTER 6: CONCLUSION

6.1 Summary

Aiming to understand the relationship of training and firm performance in early industrializing economies, the study has shown that the interpretation of training effectiveness as a process should be considered separately and its conclusions should not refer to its contribution to the firm performance. Numerous studies examine the effectiveness of training from the result point of view, that is, the reported firm productivity and/or profit (Aragón-Sánchez *et al.*, 2003; Barrett & O'Connell, 2001; Conti, 2005; Zwick, 2006). However, few observe effectiveness as a process, of which the effect is not necessarily reflected in the firm financial reports within the short term (De Grip & Sauermann, 2012; Parent, 1999; Rucci *et al.*, 1998). This links to the mixed conclusion on the training and firm performance relationship, which built the foundation of this study. While some studies reported a positive significant relationship between the two variables, others concluded a negative relationship, which leaves questions not only in the literature, but also for stakeholders on the viability of their investment.

Through the quantitative and qualitative analysis performed, the study findings show that the relationship of training and firm performance depends on the effectiveness of the process. Once effective training exists, one can argue on the effect of training on the firm's performance. This can be viewed as a two-stage training effect analysis towards firm performance. This concept is built with the Hayes PROCESS models inputs which presented the necessity of viewing the "effects" as a chain of circumstances with how and when situations (Hayes, 2015, 2018)

With the intention of obtaining an in-depth understanding of the relationship of training and firm performance, the study utilized both primary and secondary data. The study used the moderation and mediation models to accommodate different observable and unobservable factors within the effect in order to understand the effectiveness process. In order to support the objectives of the process models and obtain further detailed findings, the managers and employees' perceptions were collected and thematically analysed to explain the existing training effect variation across firms, from both process and output viewpoints.

In the introduction chapter of this thesis the justification of conducting the study in the early industrializing economy context was done, with an understanding that the training effect on firm performance, regardless of the return measure adopted, depends on environmental

context and economy development among other factors. This was the reason for including the firms' internal factors, external factors and managers' willingness to change in the primary data to establish the joint effect on the firm performance. Through the theoretical and empirical literature reviewed (Becker, 1975; Egelsner & Rena, 2013; Ng & Siu, 2004), the study recognized that effectiveness itself is a process worth examining in order to understand the variables that play a key role in its positive outcome. The concepts acted as guidelines in the study and the findings revealed their vitality when one defines the relationship of training and firm performance in a country such as Tanzania.

6.2 Conceptualization

Compiling the findings of the tested models in this thesis, that is, the education moderation model in Chapter 3, the moderated parallel mediation model in Chapter 4 and the analysis undertaken from managers' and employees' perspectives, Figure 6-1 presents the suggested model for determining training effectiveness in the firm. Through the suggested designed structural equation model for training effectiveness, it can be observed how effectiveness is a process, not only from one level to another as well shown by Tharenou *et al.* (2007), but also with a number of independent variables in each level, formatted and reflected by different measures. Specifically, within the model three major parts can be observed;

- i) Measures of training: there are different ways through which the existence and essence of training can be acknowledged within the firm. Although in most of the empirical studies these measures have been used independently, mostly due to lack of data, still including variety of variable to reflect training within the firm reduce bias of the results. Example, a firm might have high intensity of trained employees but probably it was one training where all attended. When comparing training effect of this firm and the firm which have few trained employees but with regular trainings, it may result in biased conclusions.
- ii) Factors moderating the outcome of training on needed skills change: These are situations which occur differently for different firms and they often define how effective training can become towards employees' skills change. In Chapter 4 firm needs were used as the moderator, and employee quality, specifically education, was analysed in Chapter 3. For both these chapters, the analysed moderators played a significant role in the effectiveness of the measured training. However, through the qualitative analysis undertaken, backed with the existing theoretical and empirical

studies, the suggested model includes a number of defined success factors. Features of training policies are also included as moderators, usually mentioned among unobservable factors in some empirical studies. Issues such as which form of training was employed and how the needs assessment was conducted play significant roles in determining the reaction of training on employees' needed skills change. There is a difference on how firms strategically design and implement their training policies to ensure maximum positive effect.

- iii) **Determinants of firm performance:** First the model shows that the firm's return from training can be observed from quantifiable and/or non-quantifiable measures, depending on the initial targets of the firm. For instance, while some firms will target to increase their sales as a result of training, others might target to increase their goodwill by protecting their brand, for them increase in sales occurs as a by-product, as a secondary benefit. Secondly, it is observed that employees' skills change alone cannot define firm performance. Management's willingness to change and external factors such as industry trend and regulatory environment, as defined in this research, also determine the final firm performance to a considerable extent. The three factors make independent contributions to the variation in firm performance measure from one firm to another. However, management's willingness to change has a special role on the effect of skill change towards firm performance, as seen in the analysed employees' perspectives.

6.2.1 Limitation of the model

Although the model is based on the theoretical and empirical literature, the findings from the quantitative analysis in Chapter 3 and 4 of this thesis and the qualitative analysis findings obtained in Chapter 5 have a significant contribution. It should however be noted that, Chapter 5 findings was entirely based on respondents' perception and the researcher's interpretation of the responses. In this regard, the model should be read and interpreted with caution. Moreover, since the model is not tested, it can fit differently in different contexts, with the possibility of inclusion for more or fewer measures when defining the measured variables.

Apart from this caution, the conceptualized model not only provides a guide for predicting training effectiveness from a firm performance point of view, but it also assists the researcher in deciding which variables to include in the questionnaire in order to measure similar effects.

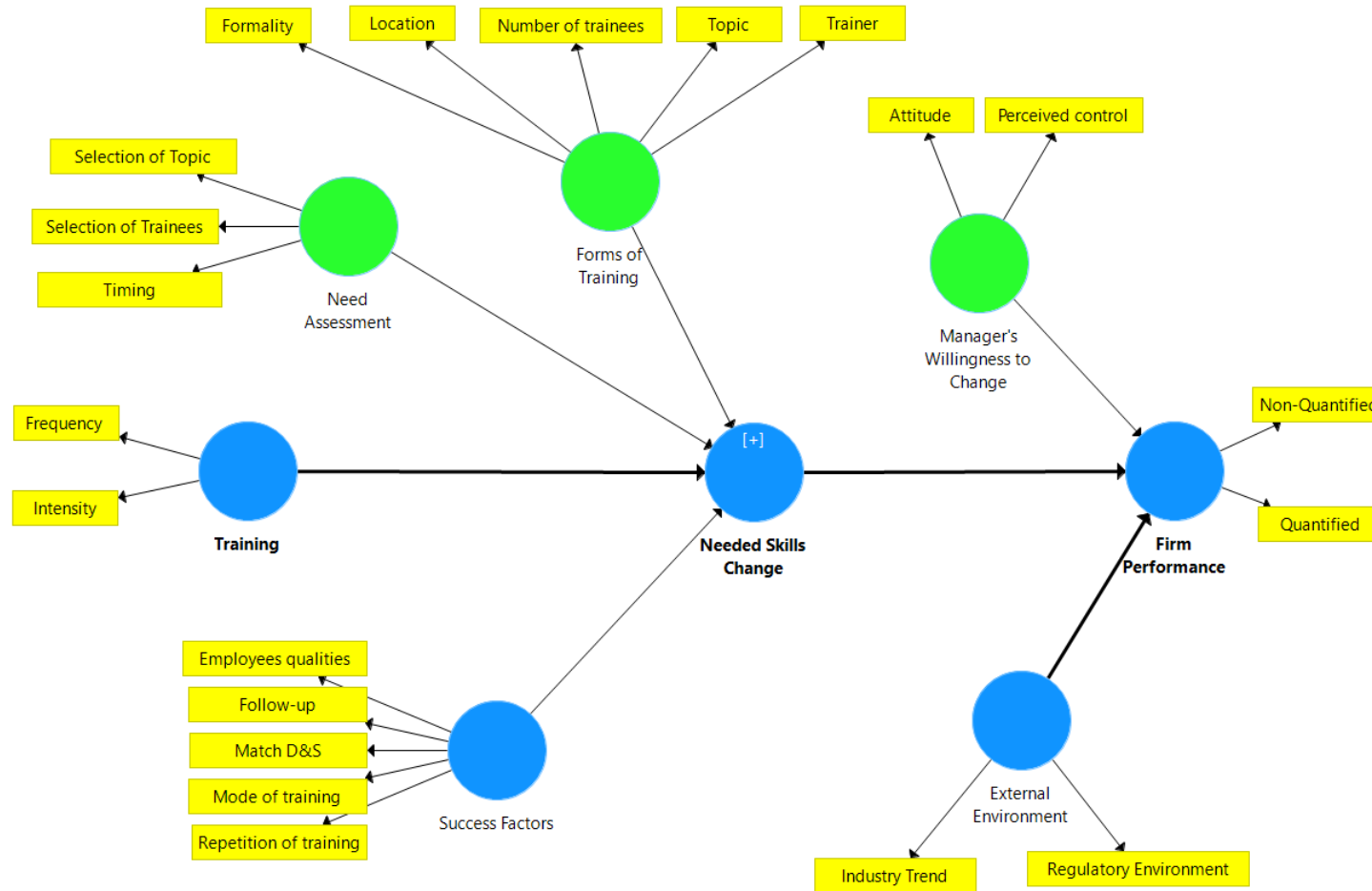
Nevertheless, the model creates more grounds for discussing the analysis findings, especially, when the predicted training effect is contrary to the hypotheses that the researcher has made.

Table 6-1: Description of the variables in the model

Variable	Measures
Training	Training intensity (percentage of employees who are trained), frequency of training (how frequently do the employees receive training)
<i>Moderators of training and needed skill change relationship</i>	
Need assessment	Selection of topic, selection of trainees and timing of training
Forms of training	Location (online or classroom), formality (formal or informal), number of trainees (one-on-one or many), topic (job related or general), trainer (professional or colleague)
Success factors	Match D&S (does training match with the existing employees needs?), employee qualities (is it attitude, education or experience which matters?), follow-up (was there follow-up after training for monitoring purposes?), mode (was the form of training selected effective?), repetition (did the employees receive training for the same topic repetitively?)
<i>Relationship of skill change and firm performance:</i>	
Skill change	Propose a 5-Likert scale, 0 being no change, 5 being above required
Firm performance	Quantified return (e.g. profit, productivity etc.), non-quantified (brand improvement, change of mindset, building expertise)
Managers' willingness to change	This stands as a moderating variable: Attitude (are managers okay for change in the firm?), perceived control (are the parties who have control on change affecting the speed and magnitude of effect?)
External control	Industry trend (competition, economy change, labour

	market, export market), regulatory environment (is the regulatory environment supportive?)
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Figure 6-1: Conceptualized model: training effectiveness process and contribution – joint effect of willingness to change and external factors



6.3 Implications and Areas for Further Research

This section summarizes key implications from the study findings and potential areas for future research.

6.3.1 *Effect of Training on Firm Performance: Role of Employees' Quality*

The results from Chapter 3 imply that basic labour quality is one of the vital factors in determining the effect of training on firm performance. Moreover, the chapter argues that there is a greater chance for training effect on non-financial return and financial return measures to differ significantly when observed from the same timeline due to the time transfer effect from productivity to profit (Rucci et al., 1998; Zwick, 2006), but also the translation of the training effect on profit margin that can be explained by the quality products or service provided post training.

The chapter used the upper-level education intensity for the Tanzanian environment, however, further research could study the interaction effect of low-level education intensity. Other human capital resources including experience, attitude, and family background should also be given priority in further studies to establish their complementing effect.

6.3.2 *Training effectiveness: How do training needs matter?*

The results from Chapter 4 implies that the demand and supply of skills should match for the effect to occur. Moreover, the findings suggest that it is necessary to establish training effectiveness through process analysis, understanding the how and when of the effect realized. It is one thing to conclude whether the training had an effect on firm productivity, but it is another thing to communicate how the effect was transferred under different circumstances.

Through studying the effectiveness process using the identified skills, the study showed that not all skills reflect their significant effect on the firm return measures at the same time, and in the same way. Some skills, for example technical skills, reflect their effect on productivity within a short period of time, while others, such as interpersonal skills, work ethic and related ones, have an indirect effect on firm output. This is due to the possibility that their effect could be observed in other non-quantifiable measures such as customer feedback and reflection in quantifiable measures would happen later. However, the delayed effect of training was not given special attention in this paper due to the nature of the data used, which

is an important scenario to consider when panel data is obtained in future studies (Colombo & Stanca, 2014; Konings & Vanormelingen, 2010; Wooldridge, 2010).

6.3.3 *Variation of training effect across firms*

Through thematic analysis, five themes were developed from the pattern of responses and their potential to address the study questions. Three themes – existence of variation, features of training policy, and observable determinants for training – fell under the studied internal factors. The responses informed the training effectiveness process within firms, and so existing variation from their existing human resource policies and ways of implementing them. The fourth theme – external factor – relates entirely to the external forces over which firms have less control, and the fifth theme – willingness to change – relates to managers' psychology. The findings brought out two major points worth taking further in future research and also by the stakeholders who conduct training evaluations for specified purposes. The complementary effect of the factors around training effectiveness towards firm performance varies particularly under geographical context, this should be carefully considered by researchers. The development level of the particular economy determines which factors are stronger, acting as the determinants of how other factors influence the firm performance. This implies that while firms work towards having effective training, the effect contribution on firm return depends on other factors, particularly external factors in the case of Tanzania. In this regard, the variation of training effect on firm performance is determined by the training effectiveness as a process, which is determined by the internal strengths and weaknesses of the firm, and by the external factors and managers' willingness to change, which is separate from the training effectiveness process. The findings, however, based on managers' and employees' perceptions and quantitative measures should be employed later to test the raised arguments statistically.

6.3.4 *Conceptualized: effective training model*

Through the suggested designed structural equation model for training effectiveness, it can be observed how effectiveness is a process not only from one level to another, as well shown by Tharenou *et al.* (2007), but also with a number of independent variables at each level, formatted and reflected by different measures. The presented variables and their respective measures not only provide a guide for predicting training effectiveness from the firm performance point of view, but also assist the researcher in deciding which variables to include in the questionnaire intending to measure similar effects. Nevertheless, the model

creates more grounds for discussing the analysis findings, especially when the predicted training effect is contrary to the hypotheses. Still, the model should be adopted with caution since the variables are based on qualitative data, despite being grounded under the existing theoretical and empirical literature (Montalvo, 2006; Thang *et al.*, 2010; Tharenou *et al.*, 2007; Wright *et al.*, 1994).

6.4 Recommendations

The findings of this study suggest a number of areas that will be of interest to different stakeholders with respect to their positions and the roles they play in human resource development.

- **Demand and supply of skills match:** This area is of interest for parties from firm-level decision makers to national level policy makers. While countries focus on investing in skills development, it is very important that they conduct stocktaking to understand the needed skills in the labour market and then start planning from that point. It was observed in Chapter 4 of this study that when supplied skills do not match the existing demand, less is expected in relation to the goals to be achieved. Capitalizing on the scarce resources available, decision makers should attempt to reach the optimal point by conducting enough research on where to focus their strength to achieve the maximum output.
- **Process of achieving effective training:** Among the areas that have been stressed by employees when they define effective training, the need assessment process is the crucial one. This information is useful for training planners and decision makers who have power to decide who to train, on which topic, and when. It is recommended that the need assessment process should be objectively performed and less biased to obtain the expected firm return. Management should remember that when subjectivity interferes with the process, the return from the investment is not guaranteed.
- **The contribution of other human capital sources:** Tanzania, as with majority of developing economies, still has a large amount of unskilled labour in the labour market (United Republic of Tanzania, 2016, 2018). Although employers are expected to train their employees for the customized tasks they have to perform, the cost of training unskilled labour cannot be compared to training semi-skilled and skilled labour. This point should be of interest for those who are in the labour market. It is

recommended that individuals should take extra proactive efforts to maximize their potential by investing in self-knowledge and skills. For instance, in Chapter 3 education was seen to play a crucial role in training effect, which implies the society with support from the authorities should invest in education. Other human capital sources including work experience can also be built into the process to maximize the value and potential of an individual in the labour market. The training received should be taken as a supplement to what they have and not as a key provider.

- **Managers' willingness to change:** The employees who attended the FGDs raised concerns about managers' attitude to the key determinants of whether the training effect will transfer towards firm performance measures. The authorities who have power to decide what can be adopted in the firm should be flexible for change to occur as long as it has a positive impact on the firm. In this regard, management should think ahead before allowing their employees to attend a certain training program on what will be the impact in terms of budget for implementation of the new skills, the opportunity cost of forgoing the existing "way of doing things", and the growth potential of the trained employee in terms of position and wage, among others. This will assist managers to decide when would be the appropriate timing for the employees to attend the particular training program for change to flow easily. Management should remember that when they do not allow for the training effect to transfer, the investment in terms of training funds and the opportunity cost of time to attend training are counted as a loss for the firm.
- **Role of external factors on the going concern:** The results showed how external factors could delay or diminish the chances for training effect to be reflected in firm performance. Since this is not within the firm's control, country policy makers should be strategic when developing and approving economic policies to allow for policy coherence in order to achieve similar goals. The policies should complement each other rather than substituting each other. While countries focus on developing their human resources in order to have competitive economies, they should remember that a conducive environment for doing business is necessary to make the private sector survive and build its roots within the economy. The majority of firms complained about the lack of support they get from the authorities to make their business a success. The regulations which are frequently passed do not support their

development but rather have a negative effect on them, and this should be carefully considered by the country authorities

- **Training effectiveness models:** Future researchers on this area should consider expanding their models to accommodate more variables for different intentions as shown in Chapter 6 of the current study. Since the findings show that the training effect can be studied in two dimensions – as a process and as a contributor to firm performance – studies should be clear with regard to which dimension they are focusing on in order to avoid biased conclusions from their findings.

6.5 Contribution of the study

The findings from the current study have crucial inputs for the research conducted in related fields due to the contribution they make. First, through the empirical evidence from the Tanzanian data, the study contributed to the existing scanty literature and presented the position of the related economies when it comes to the relationship between training and firm performance. The issue of mixed conclusions existing in the training literature conducted in different environmental contexts was among the push factors for conducting the current study to understand the situation in the early industrializing economies and so the obtained findings in contribution to the body of knowledge. The study contributes to the human capital theory particularly considering the issues of skills demand and supply. The theory explains how different human resource development practices can build up the human capital. However, the fact that the respective practices are expected to build up the ‘meaningful’ human capital cannot be ignored. It is not only about building the human capital, but realizing the meaningful and impactful human capital. This was highly stressed in Chapter 4 where the findings reveal how important it is to match the skills demand and supply to obtain the effect required.

6.6 Concluding remarks

Overall, there is optimistic progress from the investment done on training at both firm and national level. The potential of magnifying the effect exists once the concerned authorities address the factors which have a complementary joint effect with training. For instance, the fact that other human capital sources such as education have a positive interaction effect on training effectiveness could be strategically addressed and measures to balance the scarce resources on basic education set in place. The same approach should be adopted to other key

factors which have a vivid moderating effect, such as industry trend and the regulatory environment. Lastly, monitoring and evaluation of the training effect should be frequently undertaken through relating training to different measures, in order to obtain inputs for reviewing existing policies or formulating new strategies.

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APPENDICES

Appendix A: Descriptive statistics

Variable	All Firms			Trained Firms		
	Obs	Mean	SD	Obs	Mean	SD
Firm age	410	17.0	12.7	137	18.2	13.0
Top Manager experience in years	415	14.8	10.0	138	15.7	10.6
Top Manager education in years	393	12.9	3.7	130	13.9	3.7
Labourers	423	35	61	140	61	89
Labourers with lower education (%)	388	61.81	31.07	128	57.09	31.38
Labourers with upper education (%)	388	38.19	31.07	128	42.91	31.38
Training intensity (%)	124	0.56	0.37	124	0.56	0.37
Capital (millions tshs)	304	486.00	1,460.00	108	850.00	2,040.00
Last financial sales (millions tshs)	417	1,810.00	4,760.00	138	3,300.00	6,700.00
Gross Profit (millions tshs)	345	1,860.00	6,860.00	114	3,470.00	9,480.00

	Manufacturing			Non-Manufacturing		
	Obs	Mean	SD	Obs	Mean	SD
Labourers with upper education (%)	194	27.98	25.47	194	48.40	32.82
Training intensity (%)	56	0.58	0.39	68	0.54	0.36
Last financial sales (millions tshs)	202	1,770.00	5,100.00	215	1,850.00	4,430.00
Gross Profit (millions tshs)	163	1,490.00	5,190.00	182	2,200.00	8,070.00

	<20 Employees			>= 20 Employees		
	Obs	Mean	SD	Obs	Mean	SD
Labourers with upper education (%)	250	33.05	30.48	138	47.51	30.03
Training intensity (%)	55	0.58	0.37	69	0.54	0.37
Last financial sales (millions tshs)	263	268.00	598.00	154	4,440.00	7,070.00
Gross Profit (millions tshs)	218	216.00	1,270.00	127	4,680.00	10,600.00

Appendix B: Relationship of training and firm performance: productivity level

Variables	Productivity		Profit	
	high productive firms	less productive firms	high productive firms	low productive firms
Labour (ln)	-3.035(1.288)**	8.435(11.62)	-4.204(0.777)***	51.55(17.95)**
Capital (ln)	3.807(2.017)*	1.004(1.363)	2.913(1.628)*	8.057(3.01)**
Labsquare (ln)	-0.0017(0.0847)	-1.599(1.08)	-0.00678(0.0718)	-3.908(1.102)***
Capsquare (ln)	-0.116 (0.0523)**	-0.0261(0.0159)	-0.103(0.0373)**	-0.0997(0.0331)**
ILAB*ICAP	0.150(0.043)***	-0.148(0.469)	0.212(0.0477)***	-2.193(0.841)**
Training intensity (ln)	-0.941(0.78)	-1.904(0.767)**	-4.127(0.638)***	-4.837(1.376)***
Education intensity (ln)	0.0434(0.193)	0.0102(0.451)	1.124(0.172)***	-0.868(0.306)**
Education intensity (ln) *	0.258(0.229)	0.701(0.331)*	1.089(0.167)***	1.968(0.546)***
Training intensity (ln)				
T/Manager education years (ln)	0.258(0.458)	-0.181(0.518)	0.546(0.329)	-1.503(0.434)***
T/Manager years of experience (ln)	-0.478(0.0798)***	-2.415(2.427)	-0.463(0.112)***	-8.387(2.468)***
Sector dummy	Yes	No	Yes	Yes
Firm age dummy	Yes	Yes	Yes	Yes
Size dummy	No	No	Yes	No
Constant	-11.47(17.54)	12.92(15.17)	-4.247(15.71)	-66.51(35.58)*
R-squared	0.531	0.802	0.75	0.89

*Standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$*

Appendix C: Relationship of training and firm performance: size of the firm

Variables	Productivity		Profit	
	small firms	larger firms	small firms	larger firms
Labour (ln)	-7.557(7.563)	-2.808(1.416)*	0.138(6.587)	-4.968(1.179)***
Capital (ln)	1.213(1.61)	3.339(1.214)**	1.297(2.161)	1.961(1.178)
Labsquare (ln)	0.177(0.66)	-0.0961(0.0959)	-0.986(0.501)*	0.00151(0.073)
Capsquare (ln)	-0.0647(0.035)*	-0.108(0.033)***	-0.059(0.041)	-0.0822(0.026)***
ILAB*ICAP	0.417(0.26)	0.181(0.054)***	0.273(0.33)	0.247(0.052)***
Training intensity (ln)	-0.849(0.679)	-0.554(0.876)	-1.194(0.6)*	-3.825(0.846)***
Education intensity (ln)	0.945(0.254)***	-0.0561(0.197)	0.741(0.148)***	1.054(0.255)***
Education intensity (ln) *	0.161(0.154)	0.175(0.256)	0.321(0.171)*	1.016(0.21)***
Training intensity (ln)				
T/Manager education years (ln)	1.148(0.248)***	0.441(0.381)	0.937(0.238)***	0.583(0.292)*
T/Manager years of experience (ln)	1.018(0.619)	-0.518(0.092)***	0.63(0.381)	-0.476(0.117)***
Firm age dummy	No	Yes	No	Yes
Sector dummy	Yes	Yes	No	No
Constant	5.575(19.87)	-7.19(10)	0.156(26.35)	6.924(12.09)
R-squared	0.785	0.615	0.791	0.774

Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Appendix D: Relationship of training and firm performance: sector of the firm

Variables	Productivity		Profit	
	manufacturing firms	non-manufacturing firms	manufacturing firms	non-manufacturing firms
Labour (ln)	1.432(0.614)**	-2.802(0.762)***	1.865(0.604)**	-2.438(0.931)**
Capital (ln)	0.097(1.801)	1.701(0.453)***	0.746(1.498)	0.646(0.639)
Labsquare (ln)	-0.292(0.061)***	-0.380(0.171)*	-0.404(0.057)***	-0.103(0.283)
Capsquare (ln)	-0.012(0.046)	-0.0698(0.013)***	-0.0318(0.0389)	-0.031(0.022)
ILAB*ICAP	0.0547(0.031)	0.284(0.073)***	0.0816(0.026)**	0.153(0.1)
Training intensity (ln)	-1.204(0.553)*	0.677(1.189)	-4.075(1.003)***	-1.741(1.018)
Education intensity (ln)	0.338(0.152)*	0.293(0.298)	1.069(0.311)***	1.134(0.223)***
Education intensity (ln) * Training intensity (ln)	0.289(0.133)*	-0.208(0.376)	1.080(0.237)***	0.58(0.331)
T/Manager education years (ln)	0.664(0.319)*	1.307(0.736)	1.132(0.275)***	1.886(0.724)**
T/Manager years of experience (ln)	-0.475(0.053)***	-0.217(0.119)	-0.458(0.092)***	-0.309(0.31)
Firm age dummy	Yes	No	Yes	No
Size dummy	Yes	No	Yes	No
Constant	12.58(16.03)	2.78(2.205)	1.666(12.07)	8.812(5.53)
R-squared	0.655	0.789	0.735	0.854

Standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Appendix E: Treatment-effects estimation

Treatment-effects estimation

Number of obs = 304

Estimator: regression adjustment

Outcome model: linear

Treatment model: none

Productivity	Coef.	Robust Std. Err.	z	P>z	[95% Conf.	Interval]
ATE						
traindummy (1 vs 0)	-0.4876689	0.3977261	-1.23	0.220	-1.267198	0.29186
POmean						
traindummy (0)	16.9565	0.1908307	88.86	0.000	16.58248	17.33052

Appendix F: Interview guide

Section 1: Respondent Profile

Candidate Name (Optional)		Date of Interview:	
Interview Start & End Times:		Notes taken by:	
Firm/Business Name		Region	
Position Title		Type of business	
Size of business			

Introduction

1. Welcome to this research interview as communicated before.
2. Introduction of the interviewer (name and position of interviewer).
3. Summarize the topic of the interview to remind the interviewee of the expectations.
4. Explain the interview process – how much time is allotted, the note taking and permission for recording, and the opportunity for the applicant to ask questions, a choice not to answer question when choosing to do so, and to quit interview when feel uncomfortable.

Interview Questions

Section 2: Internal Factors

1. How can you comment on employee training policy in your organization?
2. What do you consider are the strengths of your firm in terms of human and capital resources, and how do they affect your firm's performance?
3. When you plan for employee training, how do you conduct need assessment and how do you monitor the training effect in your organization performance?

Section 3: External Factors

4. What is your opinion on the industry trend, both positive and negative, example in terms of market growth, competition, innovation, labour relations, and others, and how do they affect the performance of your firm?
5. How is the performance of your firm affected by the country's regulatory environment?

Section 4: Willingness to change

6. On a day-to-day basis, a number of changes occur locally and globally within industries, which influence how firms strategize their operations to adopt and catch up with the changes.
 - How often do you change the way you do things in your firm? Who decides on the changes to be done and what process is undergone to materialize the changes?

General Question: How do you rate the changes that occurred in your firm in the past 2 years as a result of training your employees: either (0) *no change*, (1) *slightly positive change*, (2) *strong positive change*

Interview Guide – Conclusion

1. Make sure you have contact information for references.
2. Tell the participant when they can expect the summary of the results for the research.
3. Thank the participant for setting time for the interview.

Appendix G: Focus Group Discussion (FGD) Guide

Confirmation of Consent – Before FGD starts

Thank you for agreeing to participate. We are very interested to hear your valuable opinion on the importance of training, and how effectively can firms realize their return from the training imparted.

Reminder:

- The information you give us is completely confidential, and we will not associate your name with anything you say in the focus group.
- We would like to tape the focus groups so that we can make sure to capture the thoughts, opinions, and ideas we hear from the group. No names will be attached to the focus groups and the tapes will be destroyed as soon as they are transcribed.
- You may refuse to answer any question or withdraw from the study at any time.
- We understand how important it is that this information is kept private and confidential. We will ask participants to respect each other's confidentiality.
- Please check the boxes on the circulated sign-in sheet by signing to show you agree to participate in this focus group.

Introduction:

1. Welcome: Introduce yourself and the note taker, and send the Sign-In Sheet with a few quick demographic questions (age range, gender, business type, position at the firm, and years of experience) around to the group while you are introducing the focus group.

Review the following:

- Who we are and what we are trying to do;
 - What will be done with this information;
 - Why we asked you to participate.
2. Explanation of the process: Ask the group if anyone has participated in a focus group before. Explain briefly how an FGD is done and the expectations from the participants
 - We learn from you (positive and negative).
 - Not trying to achieve consensus, we are gathering information.

- In this project, we are doing both interviews and focus group discussions. The reason for using both of these tools is that we can get more in-depth information from a smaller group of people in focus groups. This allows us to understand the context behind the answers given from the interviews by top managers and helps us explore topics in more detail.

Logistics

- Focus group will last about one hour
 - Where is the bathroom? Exit?
3. Turn on Tape Recorder.
 4. Ask the group if there are any questions before we get started, and address those questions.
 5. Participants' Introductions.

Discussion begins, make sure to give people time to think before answering the questions and do not move too quickly. Use the probes to make sure that all issues are addressed, but move on when you feel you are starting to hear repetitive information.

Questions:

1. How does the training policy operate in your firm? What is its impact on the firm performance?
2. Do you think the training providers understand the expectation from the human resource managers when you attend the training?
3. Why did you attend the particular training? What was the process followed for selecting training participants?
4. After implementing the knowledge and skills from training, did your firms experience any change on operations? Was it significant change? Was it expected?
5. What do you consider as important factors that influence the performance of the firm after training? Your opinion on the strength of the firm, external influence, and managers' willingness to change.

That concludes our focus group. Thank you so much for coming and sharing your thoughts and opinions with us. We have a short evaluation form that we would like you to fill out if

you have time. If you have additional information that you did not get to say in the focus group, please feel free to write it on this evaluation form.

Appendix H: Consent form for Managers' interviews



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CONSENT TO PARTICIPATE IN RESEARCH

Dear

My name is **Ms. Neema Robert Towo** and I am the **Principal Researcher** in this project. I would like to invite you to participate in an interview for a research project entitled “the effect of training on firm performance in Tanzania”.

Please take some time to read the information presented here, which will explain the details of this project, and ask me if you require further explanation or clarification of any aspect of the study. Your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study intends to establish the effect of training on the firm performance. At this stage of the project, we intend to establish the causes for the existing variation of the effect among firms which employ trained employees in their daily operations. The interview that will be conducted with your firm will significantly contribute to the database we build with the intention of answering the question at hand.

We do not foresee any negative experience or risk on your side as a result of participating in this study. The findings of the research will be shared to you as a report at the end of the project which will benefit your organization as you will be able to make more informed decisions in both pre-training and post-training stages for improved business performances. There will be no fee charged for you to participate in this study. The interview sessions will be recorded to avoid missing any important information you provide. The recordings will be kept in the folder which can only be accessed with a password, and at the end of the project they will be permanently destroyed. Only the principal researcher and the principal

supervisor will have access to the origin data, and pseudonyms will be used in the writing of the report.

If you have any questions or concerns about the research, please feel free to contact me as the principal researcher through my email address, 21507074@sun.ac.za or cellphone +27616677589. You can also reach the principal supervisor of the project through the following email address, nyankomo@sun.ac.za.

RIGHTS OF RESEARCH PARTICIPANTS: You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research participant, contact Ms Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development.

You have right to receive a copy of the Information and Consent form.

If you are willing to participate in this study please sign the attached Declaration of Consent and hand it over to the principal researcher/investigator.

DECLARATION BY PARTICIPANT

By signing below, I agree to take part in a research study entitled

.....
.....and conducted by **Ms. Neema Robert Towo**

I declare that:

- I have read the attached information leaflet and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.
- All issues related to privacy and the confidentiality and use of the information I provide have been explained to my satisfaction.

Signed on

Signature of participant.....

SIGNATURE OF INVESTIGATOR

I declare that I explained the information given in this document to _____
[*name of the participant*] [He/she] was encouraged and given ample time to ask me any
questions. This conversation was conducted in [*Afrikaans/*English/*Xhosa/*Other*] and [*no*
translator was used/this conversation was translated into _____ by
_____].

Signature of Investigator.....

Date.....

Appendix I: Consent form for FGD participant



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STELLENBOSCH UNIVERSITY

CONSENT TO PARTICIPATE IN RESEARCH

Dear

My name is **Ms. Neema Robert Towo** and I am the **Principal Researcher** in this project. I would like to invite you to participate in a focus group discussion for a research project entitled “the effect of training on firm performance in Tanzania”

Please take some time to read the information presented here, which will explain the details of this project, and ask me if you require further explanation or clarification of any aspect of the study. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study intends to establish the effect of training on the firm performance. At this stage of the project, we intend to establish the causes for the existing variation of the effect among firms which employ trained employees in their daily operations. Your participation in this focus group discussion will be considered as individual opinion, and at any case will not refer as your firm opinion. The information obtained will significantly contribute to the database we build with the intention of answering the question at hand.

We do not foresee any negative experience or risk on your side as a result of participating in this study. There will be no fee charged for you to participate in this study. The group discussion sessions will be recorded to avoid missing any important information you provide. The recordings will be kept in the folder which can only be accessed with a password, and at the end of the project they will be permanently destroyed. Only the principal researcher and the principal supervisor will have access to the origin data, and pseudonyms will be used in the writing of the report.

If you have any questions or concerns about the research, please feel free to contact me as the principal researcher through my email address, 21507074@sun.ac.za or cellphone +27616677589. You can also reach the principal supervisor of the project through the following email address, nyankomo@sun.zac.za.

RIGHTS OF RESEARCH PARTICIPANTS: You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research participant, contact Ms Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development.

You have right to receive a copy of the Information and Consent form.

If you are willing to participate in this study please sign the attached Declaration of Consent and hand it over to the principal researcher/investigator.

DECLARATION BY PARTICIPANT

By signing below, I agree to take part in a research study entitled

.....
.....and conducted by **Ms. Neema Robert Towo.**

I declare that:

- I have read the attached information leaflet and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.
- All issues related to privacy and the confidentiality and use of the information I provide have been explained to my satisfaction.

Signed onSignature of participant.....

SIGNATURE OF INVESTIGATOR

I declare that I explained the information given in this document to _____
 [*name of the participant*] [He/she] was encouraged and given ample time to ask me any
 questions. This conversation was conducted in [*Afrikaans/*English/*Xhosa/*Other*] and [*no*
translator was used/this conversation was translated into _____ by
 _____].

Signature of Investigator

Date

Appendix J: Codebook

Code	Definition	Example of Quotation
Necessity of Training policy		
Not-necessary	Training is perceived not necessary for firm operations	<i>Our business doesn't require a lot of training, we can still operate without training</i>
Necessary	Training is perceived necessary for firm operations	<i>Yes, we have training policy, we value training for our operation, it is our number one priority when managing our employees</i>
Frequency	The number of times which a particular employee attend training annually	<i>Our principles here...per year every employee is supposed to have not less than 40 hours of training, whether internal or external training</i>
Turnover	Labour turnover after receiving training, it limits firm return	<i>As the owner, I equip myself with most skills and knowledge and I share with them often. We tried to train people but they left immediately and its discouraging, employers have to be protected</i>
Extent of Training Effect		
Strong	Training has strong significant effect on firm performance	<i>Because of training, we have reduced the penalties we were getting from 1.5bn to 50mil this year which were resulted by the mistakes we were making for lack of skills.</i>
Average	Training has average significant effect on firm performance	<i>Am telling you...the training obtained does not have much effect to us; we don't have capital, we need those machines they show us, but where do we get money to buy them....so we end up doing what we can</i>

Minor	Training has minor significant effect on firm performance	<i>Our firm get most of its trainings from donor-funded projects, who come with their preferred topics; honestly, they are not helpful since the supplied knowledge is not what demanded. If you teach me entrepreneurship and I need technical training, it won't help</i>
Quantified Firm Performance		
Output	Effect of training is reflected on firm sales	<i>I will tell you this...training plays significant role, our work needs consultants to be updated often to be able to serve clients... that's where we make our sales</i>
Profit	Effect of training is reflected on firm profit	<i>We have reduced the penalties we were getting from 1.5bn to 50mil this year caused by the mistakes we were making before receiving the training</i>
Non-quantified Firm Performance		
Mind-set	Effect of training is reflected on the changes occurred on employees mind-set	<i>it works a lot, our main concern is on mind-set of people, to keep the employees at ease with positive attitude, that's our concentration</i>
Expertise	Effect of training is reflected on the expertise developed on specific area	<i>For technical work, one cannot without training. Some of my employees open their own offices after benefiting from my trainings, I take it positive</i>
Brand	Effect of training is reflected on the market response on the company brand	<i>Training play a bigger role to make our employees competitive, we cannot afford to keep a machine supervisor without training, it will affect the quality of our products in the market</i>
Forms of Training		

One-on-one	Training conducted to individual employee, mostly through the course of work with close supervision	<i>One-on-one training is used in exceptional situation and it works, especially when that person has other personal issues which hinder their performance, they need extra attention</i>
Group	Training facilitated to a number of employees together, regardless of modality	<i>Every department has training twice a month. All the trainings are in-house, only in rare cases few goes for outside training since this is a private company we attempt to minimize cost</i>
E-learning	Electronic training, mostly done individually by employees under company policies	<i>Even the management, we are aware of this. As much as we think E-learning is an easier way to give everyone a chance to receive training on what we believe are key issues in the operation like soft skills, it's sad that they are not taken very serious and so they are not very effective as oppose to the classroom trainings</i>
Classroom	Training done on physical address where the trainees and trainers physically meet	<i>We have in-house trainings where we can train each other, but sometimes we also outsource where we cannot train among each other. We have a bank academy where if it's a training for many people, the trainer come in that location, but training which target one or few people, they move to the training providers</i>
On-the-job	This are informal training or instructions which employees get as they continue working, mostly facilitated by the supervisor	<i>As the owner I got training from SIDO, they are professionals... then I trained my employees, I cannot afford to take them for trainings...</i>
Formal	These are training systematically planned targeting particular skills need, mostly facilitated by professional trainers	<i>Yes, our waiters even do exams after training example on menu, cocktails etc.</i>

General	The knowledge obtained from these training can be used across sub-sectors	<i>Most of our trainings are donor funded, so we do not have much say on training topics...mostly they do general issues not much related to our work...</i>
Specific	The knowledge obtained from these training can only be used in that particular sub-sector, sometimes in that firm only	<i>Our trainings are more linked to technical issues and less on administration issues</i>
Professional	Training facilitated by professional trainer	<i>yes we have a serious training policy, part of it we specialized it and call it operational excellency, green belt and black belt which are problem solving techniques, few companies have implemented this type of training like Toyota, Ford and they have great reputation, it's really special kind of training...the trainers come from New York and London, very big training institute and they come train us in in our company premises</i>
Colleague	Training facilitated by a colleague who have attended the respective training before	<i>if it's a mandatory training, those who attended have to train the others who didn't attend</i>
Selection of Trainees		
Must	All employees must receive training	<i>Every one receive training on how to operate the machines before commencing their duties</i>
Equal	All employees have equal chance of being selected, although it is not necessary that all of them will attend training at specified period	<i>The supervisor train them depending on what they display weakness. At first the employees are left to perform without training, but later they start to receive specific trainings on their performance</i>
M/choice	Selection is based on managers subjective choice	<i>We understand our employees as our children, we know who to train to get more impact, there their education does not matter</i>

E/qualities	The attitude, experience, education of the employee determine whether they are potential for training	<i>We cannot expect somebody with minimal education to do high tech jobs, so training are given as per their education level, keenness, and motivation to learn</i>
Loyalty	The expressed employee's loyalty, mostly observed from the number of years the employee have stayed in the respective firm	<i>We use experience and loyalty to the company to decide who to go for training since other people leave the company after getting training</i>
Seniority	The senior employees are given priority for attending some of the training	<i>A number of people to attend depends on the company budget, and in that case we consider seniority</i>
Individual	The individual performance determines if the employee require training	<i>When production efficiency is down we know people either employees are not capable of doing their jobs or they need training</i>
Budget	The budget dictates the number of employees who can attend training	<i>A number of people to attend depends on the company budget and in that case they consider seniority</i>
Requirement	Some training are specific on the qualities of trainees they require and so dictate selection process	<i>Partners also decide who to attend depending on the requirement of the training example if they need a certified accountant employee, then the existing ones are given priority</i>
Relevance	Some training are relevant to specific departments and have less value to the other departments	<i>As a bank, we observe which products we are dominating in the market, so most trainings focus on raising competitiveness on that product. Often we select the person who is relevant in that training, but we also give priority to those who are less performing to improve their productivity</i>

Interest	Expressed interest of individual employee on a particular training	<i>Selection of training attendants depend on annual evaluation, students evaluation, employees express interest through special form they fill in their departments.</i>
Urgency	The urgency of the knowledge and skills to specific group of employees	<i>We look at adaptability and the problem that cause the company to underperform then we determine the concerned department and give it priority for training. Example the project department is sometimes urgently trained because most of the company activities depend on them, like when we want to build new towers; they are the ones doing it. This year we moved to security department because we experienced theft of fuel in the towers</i>
Priorities	The priority department from the firm strategic policies	<i>Complaints from the clients, mostly obtained from the reviews in the internet, determine which training to conduct and who is responsible for those feedback among employees to be given priority for training</i>
New employee	The new employees who are just employed in the firm are considered to have less knowledge on specific firm skills and requirements	<i>In selection of which training to conduct, we consider issue of time, and new employees. The new employees are given more priority.</i>
Selection of Topic		
New_product	The introduction of new product which place a need for employees to be trained on the same	<i>When there is a new idea, innovation we conduct training. The training is done on rotation in order to proceed with work</i>
E/needs	Employees may express need on specific training topic, mostly through their performance review	<i>We use employees' appraisals, guests' feedback to determine the training need.</i>

C/feedback	Customers feedback dictates which area require improvement, and so training	<i>We use monthly reports to decide on which area should we train them depending on customers feedback</i>
Funders	Some of the training financial supporters have their specific topic at hand	<i>Our firm get most of its trainings from donor-funded projects, who come with their preferred topics; honestly, they are not helpful since the supplied knowledge is not what demanded. If you teach me entrepreneurship and I need technical training, it won't help".</i>
Timing of training		
Availability of training	The selection of topic much consider which training exist at that time and employees are encouraged to attend	<i>Need assessment...not really, we just see which training is there and people go</i>
Employee productivity	The employees performance trend dictate the urgency of training	<i>We check customers feedback, check the missing standards from employees which affect our brand</i>
Season	Timing for trainings should not interfere with other operational activities	<i>When there is a new idea, innovation we conduct training. The training is done on rotation in order to proceed with work</i>
Success Factors		
Match	The match of demanded and supplied skills	<i>Most of the trainings are not helpful since the supplied knowledge is not what demanded</i>
Mode	The training facilitation approach	<i>E-learning are not very taken serious and so they are not very effective as oppose to the classroom training</i>

Repetition	The number of times the employee is trained on the same topic	<i>Example, one employee had very weak performance but I trained him one on one repetitively for like 3 weeks, and in that month he won the best employee of the month, and among best employees onwards</i>
Follow-up	The follow up on employees training skills implementation after training, determine if there are any obstacles	<i>On technical jobs we employ people who are educated so that they catch up faster during training, on non-technical we have semi-skilled... they need close follow up after training for it to work</i>
E/Qualities	The interaction effect of training and other human capital sources like attitude, education and experience	<i>Education of the employee matter on the effectiveness of training, its easy when one has theory</i>
Manager attitude		
Positive	Supportive and ready for changes within the firm	<i>When we receive feedback from the person attended the training, we really want to know what they learn to improve the company performance, especially on the respective product which they receive training...we not only positive for change, we can't wait for change, as long as it's for good</i>
Negative	Not supportive on changes	<i>Honestly, we do not know which change we need; there is only one way to do the job and no other way of doing it</i>

Not necessary	Believe that change is not necessary for the nature of their firm operations	<i>If we are successful, we may automate a little bit, product is simple, I don't think it needs much change for now, it's not among our priority to change anything about our operations...at least for now</i>
Average	Open for changes but selective	<i>We welcome changes, but not everything is taken on board. Management has to analyse and decide what to take what not to take</i>
Perceived Control		
Internal control	Within the firm there are parties responsible for change to materialize	<i>We communicate the changes to be made in the daily employees' meetings for them to assist on the implementation. As management we go front in the tough situations and decide on behalf of other parties in the company</i>
External control	Outside the firm there are parties responsible for changes to materialize	<i>The regulatory institutions control much on any changes we will want to make because they are the one which approve the quality. The manufacturers of automobiles also determine what changes we can make on our products that are compatible with the innovations done. Depends on the product requirement in the market we can change ingredients</i>
Industry Trend		
Competition	Competition within the particular sector market, from local and foreign investors	<i>Competition is very high, but its good cause it make us think further</i>
Economy	The stages in the economy cycle determine the performance of firm in specific season	<i>Competition is there but not much, the economy has been bad recently...If the businesses of our clients are affected by the</i>

		<i>economy trend, we are also affected</i>
Labour_market	Competition in the labour market	<i>turnover of employees is a challenge, we train them but they leave, very few stay for 5 years</i>
Export_market	The potential of export market to increase firm market share	<i>Competition is very high. I sell local and international (export is very promising)</i>
Regulatory environment		
Supportive	The existing government regulations are supportive to firms operation success	<i>Being under small business association is really helpful, we get some benefits from the government</i>
Non-supportive	The existing government regulations are not supportive to firms operation success	<i>There are a lot of charges and fines even for justifiable reason. It's a question whether the government is there to help or waiting in the side-line to look for fines and interests</i>

Note: The bolded rows represent code groups/ sub-themes.

Appendix K: Selected Reviewed Literature

	AUTHOR	THEME OF STUDY	COUNTRIES COVERED	TIME PERIOD COVERED	THEORY USED	METHODOLOGY (MODEL)	Dependent Variable	Independent Variable	ESTIMATION TECHNIQUE	FINDINGS
1	Barney J. (1991)	Firm resources and sustained competitive advantage	-	-	Resource model for sustained competitive advantage	Review of theories	Sustained competitive advantage (SCA)	Strategic planning		Informal planning can create sustainable competitive advantage when they are unfold
							Measured by: Valueable, Rare, Imperfectly Imitable, Substitutability	Information processing systems		Machine-manager systems (where the IS is embedded in manager's decision making) can create SCA
							Sourced from heterogeneous and immobile resources	Positive reputations		Positive reputations to customers and/or suppliers have the possibility of creating SCA. This however much rely on historical hard to duplicate settings
2	Bartel A. (1994)	Productivity gains from the implementation of employee training programs	U.S.	1983 - 1986	Empirical framework	Cobb-douglas	Labour productivity (log of net sales/employee)	Training (proportion of the occupation where the formal training exists)	Linear regression using first difference model	Training leads to significant productivity growth. The results further suggest that possible implementers of the training are firm with low productivity aiming on increasing their productivity. This is after controlling for R&D considering high performed firms might implement training for innovation capabilities
								Controlled for: age, percent union employees, dummy on use of other HR policies		
								Here the cost of purchased materials was used to control for sales variable to get the value added proxy (measured by materials/sales)		The introduction of training due to productivity issues, results to increase in productivity in the years ahead and catch up with comparable firms

3	Becker G. (1994)	Human capital: Theoretical and Empirical analysis (Human capital revisited)	-	-	Revisit human capital	Discussion from previous arguments and need for quality labor contribution	Education and Training as main important sources of human capital		-	Education and training still play a major role for human capital
					Assume investment are rational responses following the calculus of costs and benefits		Human capital and Family			Countries with persistent economic growth invested on human capital
							Human capital and Economic development			When families' income increase, their birth rate goes down and invest more on human capital (education and training) of their few children
4	Arthur J. (1994)	Effects of human resource systems on manufacturing performance and turnover	U.S	1989	Behavioral Perspective	Conceptual model	Manufacturing performance (organizational effectiveness)	human resource systems (control and commitment)	Linear regression	Significant relation between HR system and organizational effectiveness. There were low labor hours per ton and low scrap rate for HR systems which emphasize commitment
					Control theory					Control systems will result to higher turnpvers than commitment systems
										Negative relationship between turnover and manufacturing performance is higher in commitment system than control system
5	Becker B. & Gerhart B. (1996)	Impact of HR management on organizational perfor. :progress & prospects			Resource-based view	Review of different studies using conceptual model	Is there one best way, many best ways or does it depends with the firm?		Reviews of different studies	HR systems have economic potentials but there is no agreement on how those potentials will be achieved

							How should effectiveness and HR be measured?		The HR systems and functions should align to the identified HR policies which address the business goals and support firm's operating and strategic initiatives
							Obtaining more robust and valid findings		A set of practices that have individual, positive effects on performance may be a necessary, but not sufficient, condition for a larger effect on firm perform
6	Rucci A., Kirn S., & Quinn R. (1998)	The <i>Employee - Customer - Profit Chain</i>	Was a case study at "Sears" retail shop	1992-1996		Case study	Employee - Customer - Profit measured by employee retention from employee behavior, customer retention from the satisfaction, and financial performance respectively		Developed a model on Total Performance Indicators - ECP model
7	Blundell R., Dearden L., Meghir C., & Sianesi B. (1999)	HC Investment: The return to the individual, firm and the economy	-	-	Growth accounting theoretical framework	Literature review	Individual return, Firm return, Economy return	Education and Training	Compare different findings
					New growth theories				Strong complementarities between different types of human capital investments; early achievements and qualifications determine the involvement in the coming education and trainings
									Some indication that workers and firm don't only share returns, but also costs
									Positive returns to the firm when the skills obtained lead to innovations and easy implementation of new technologies
									The contribution of education to macroeconomic growth is controlled by level of R&D and physical capital investment indirectly

8	Barrett A., & O'Connel P. (2001)	Does Training generally works: The returns to in-company trainings	Ireland	1993, 1996, 1997	Becker's theory	Cobb douglas framework	Productivity (measured as change in sales/reported labours)	Effective labour - measured by reported labour and their human capital (training stock)	OLS	General training are statistically significant to the firms productivity even after controlling for other factors like capital (specifically higher capital). This is not the case for specific trainings which were seen to be insignificant
								Training variable is captures in 3 different methods: Trained workers/total labours, total days in training/total labours and training expenditure/total payroll	Correlation matrix	Employees devote more in general training due to its transferable nature to other firms and so gain more human capital than specific training which are have less incentives
9	Ng Chu Y. & Siu N. (2004)	Training and enterprise performance in transitional economy	China	2002	Discomfirmation theory (for expectation and perception comparison)			Comparison between perceived achievement and expectations of training	Exploratory Factor analysis	Perceived achievement fell short of expectation by less than a unit scale
					Empirical framework & Becker theory	Cobb douglas	Sales in logarithm	Managerial and Techhnical training expenditures in logarithm form		Postitive relationship between training expenditure particularly on managerial training and enterprise productivity while technical training was not significant
										1% increase in manager training lead to 0.13% increase in sales for non SOE companies while the increase is 0.32% for SOE
10	Ballot G., Fakhfakh F., & Taymaz E. (2006)	Who benefit from the training & RnD, the firm or the worker	France and Sweden	1987-1993 comparable large firms panels	Human capital (Becker 1964, Lynch 1994)	Cobb douglas Production Function model, the technology variable (Ait) controlled for technology change and macroeconomic shocks using dummies. Here L stand as employees and T variable came	Productivity - Value added per employee	Training - Trainng stock per employee (calculated by formula): This was possible to calculate in French data but not Sweden data it missed separation rates (estimations were done)	The author used OLS, FE, RE & GMM. GMM was used to control for possible endogeneity in R&D and Training variables.	Firms share large percent of tangible assets returns than intangible assets. However in returns from Training and R&D investment, firm get the larger share than workers (through wages)

						separately	Wage - annual average wage rate per employee	Training flow - Annual train expenses per employee	Final used GMM - SYS model, and OLS was used for comparison	
								R&D - Proportion of Researchers		
								Capital - Fixed capital stock per employee		
								Employee - Number of employees		
								Also used interactions variables, kr, kh, hr		
11	Dearden L., Reed H., & Reenen J. (2006)	The impact of training on productivity and wages	British	1983 - 1996 industries panel	Human capital (Becker 1964, Lynch 1994)	Cobb douglas production function. However here he disaggregate L to Trained and Untrained labour	Productivity (measures as output/total labours)	Training - measured as the proportion of trained labour to total labour	Random effect, Within Groups and SYS GMM	The results shows that 10% increase in training measure lead to 6% increase in productivity and 3% increase in wages
					Imperfect competition	One limitation of the model, it was difficult to separate training form education due to the nature of question used during survey	Wage	Other dimensions of quality of labour like age and occupation are captured during estimation		The impact was even larger when endogeneity of training was considered compared to when training was treated as exogeneous variable
12	Zwick T. (2006)	Impact of training intensity on establishment productivity	Germany	1997 - 2001	Empirical evidence	Using a base of cobb douglas	1st step: Productivity (sales less cost of sales = value added)	Training intensity(proportion of trained workers)	2 step instrumental variable	Selectivity of investing on training was among others due to skills shortage
						Derive empirical models	2nd step: Time invariant variable (is TFP below or above of other establishments)			Increasing training intensity (1% in 1997) has a significant and positive effect on establishment productivity (around 0.76% between 1998 - 2001)

						After testing: trans-log specification model is preferred	Training intensity	Skills gaps		Established reacted to skill shortage by increasing training due to thin skilled labour market
13	Kahyarara G. & Teal F. (2007)	The returns to vocation trainings and academic education	Tanzania	1997 - 2000	Empirical framework (Mincer 1974)	Mincer return empirical model	Rate of Return measured by earnings	On-the-job trainings	Linear regression, controlling for FE and account endogeneity	Strongly positive correlation between current and past trainings to the earnings. Short course trainings don't lead to higher earnings
					Human Capital (Becker 1964)			General education		However, fixed effect captures the quality of the trainings and imply trained workers will only realise the returns under fixed effects. Once its controlled, then negative returns from past trainings is seen
								Vocation education		Academic education lead to higher ROR more than vocation education even after considered that those goes in VE come from AE
										The size of the firm matters for the return level of vocational relative to education level
								Technical college		Whether to invest in general education or vocation, the results couldn't give a clear recommendation because; the integration of the two esp for lower levels of edu give higher returns and 2nd it will latter depends on the type of firm which the worker will be employed eg size of the firm
14	Tharenou P., Saks A., & Moore C. (2007)	A review and critique of research on training and organizational level outcomes	Literature review		Resource - based model, Cybernetic (input-throughput-output) model and training effectiveness model	Review of previous studies	HR outcomes, Organizational outcomes and Financial outcomes	Training		Developed a model which link the items levels from training to HR outcomes to Org outcomes to Financial outcomes

										Found that there is still few literatures which studies the mediation of the middle parts to the financial performance of the firm which is a gap in literature
										Also found that there are stil issues on measurements of organizational and financial performance where subjective measures (manager's perceptions) were used in most of the studies which overstate the impact of training
15	Chi N, Wu C. & Lin C. (2008)	Training mediating relationship between FDI and SME performance	Taiwan	2002	Empirical framework	Conceptual model	Firm performance (deviated sales using logarithm)	FDI status (Yes or not), FDI related training (Yes or not)	hierachieal regression analysis	FDI is significantly positively related to SME performance
								Training needs (Likert scale, not at all - very much)	Three steps of examining the mediation effect	FDI is significantly positively related to training implementation
								Control variables (Firm size and age)		Training implementation signficantly positively predict SME performance and partially mediating the relationship of FDI and SME perf
										When training needs are high, the relatioshp of training implementation and organization pefromance became significantly negative, while its vice versa when they are low
					Resource based model	Case study	Non financial performance			Few studies have been done in developing countries
					Behavior model					A number of researchers used subjective methods in their analysis due to things like lack of data

					Cybernetic model					Developed a framework of analysing training on firm performance
					Devana et al (1984) model					
					Guest (1987) model					
					Kozlowski et al (2000) framework					
17	Castellanos R. & Martin M. (2011)	Training as a source of competitive advantage: the role of firm strategy & impact on performance	Spain	2005	Univrsalist approach & empirical framework	Empirical models	Profitability (ROA)	Training measured in 2 dimenstions	Linear Regression	
							Efficiency of training (subjective measurements from managers opinion)	Dichotomic variable: trained or not	ANOVA	Profitability of trained companies in greater than those who don't train
								Intensity of training: expenditure/sales: control for firm size		Spending on training does not influence the attainment of business objectives
18	Niazi A. (2011)	Training and dvt strategy and its role in organizational performance	Pakistan	2010	Empirical literature	Empirical/conceptual framework/design	Organizational performance	Learning organization and its strategic training and devp alignment	hierachial linear model	The findings shows that in average the employees agree to all of the independent variables for better organizational performance
								Training need analysis and manager involvement on it		It is then a call of management to strategically invest in T&D for bridging the gap since its concluded that in pakistan many companies are not meeting employees demand when it comes to training where attained skills are not required skills

								Training formalization including implementation and evaluation		
								Mediating variable: Employee performance		
19	Thang N. & Quang N. (2011)	Impact of training of firm performance in transitional economy	Vietnam	2007	Empirical review	Cobb-douglas	Firm performance (logarithms of sales and productivity)	Training (measured by cost of training)	Linear regression	Significant positive impact on productivity of manufacturing companies (1% for 0.18% increase) but not significant in non manufacturing
							Percentage changes in sales and productivity			Significant positive impact on sales of manufacturing companies (1% for 0.18% increase) also non significant in non manufacturing
										Similar results have been observed on percentage change on sales and productivity for manuf and non manuf companies
20	Grip A. & Sauermann J. (2012)	The effects of training on own and co-worker productivity: random selection, externalities, return on investment, output quality	Netherlands	Total 32 weeks (including pre-, during and post experiment): 45/2008 to 24/2009	Growth theory & Standard theory	Empirical framework	individual performance (measured by average time taken for one call)	Training participation (dummy, 1 if under after training period and 0 otherwise)	OLS	First, random selection of treatment group leads to higher effect of training than controlling for selectivity, second the improve in productivity was not compromised by quality, third there was a spill over effect from the trained to untrained group
21	Percival J., Cozzarin B., & Formanek S. (2013)	Return on Investment for workplace training	Canada	1999 - 2005	Empirical framework	Cobb-douglas	Productivity	Training expenditure (present and lag variable)	Stepwise regression	Although 12 out of 16 industries studied had positive effect on productivity from training, its only 4 industries which experienced positive return on training investment after applying NPV calculations

							Net present value was calculated from elasticity results (derived from productivity) discounted by 1999 rate		Elasticity and IRR	The IRR varied from -18% to 23%
										Low profitability was found in low invested industries
										In general, training has little impact in terms of financial effects
22	Backman M. (2014)	Impact of human capital in firm productivity	Sweden	Cross section data, 2008 survey	Human capital, Resource-based, Endogenous growth theory	Multilevel models	Firm productivity (value added per employee)	Human capital (education, experience, skills - proxied by occupation) & other variables	Residual maximum likelihood	Firms with higher level of human capital perform better than others. Also firms characteristics like location plays a major role on the firm productivity which will be observed in the final.
23	Colombo E. & Stanca L. (2014)	Impact of training on productivity	Italy	2002 - 2005	Empirical review	Empirical analysis	Value added per worker	Training measured by intensity of training using proportion of trained workers	GMM system estimator	Trained workers leads to 10% productivity higher than untrained. Failing to observe the heterogeneity leads to underestimation of the training impact. The endogeneity of training was accounted.
								Added another measure of training: training duration		More impact of training was observed from blue-collar workers
										Failing to account for training duration underestimate the results
										When controlled for size, small firms showed a stronger relation between training and productivity
										Manufacturing firms showed less stronger relation between training and productivity though its small and insignificant difference

24	Darvas P. & Palmer R. (2014)	Demand and supply skills in Ghana: How can training improve employment and productivity	Ghana	-	Review of literatures and country trends	Conceptual framework: Linking demand and supply of skills, with productivity	Productivity & Employment	Interaction of demand and supply of skills		Productivity is still low for most firms due to inefficient and ineffective trainings in place
								Different sectors were considered		The apprenticeship informal trainings which are the main source of skills remain uncompetitive in the market
										Public sector training providers are also uncompetitive
										Private sector formal trainings are competitive but mostly placed in urban areas and reach few people
										There is no link between demand and supply of skills, especially from public sector training providers
										The labour market link which connect labours skills to the market is still weak, placements don't perform as expected
										Private sector is adjusting to low skills by adapting low technology in their production process
										Majority of labour force remain uncompetitive in higher skills placements
25	Konings J. & Vanormelingen S. (2015)	Impact of training on productivity and wages: firm lvl evidence	Belgian	1997 - 2006	Human capital (Becker)	Cobb douglas	Productivity and wages	In measuring training, in diff equations they considered proportion of trained workers, training hours and training cost, and also consider other worker heterogeneity	OLS, OLS2, and Average Control Function (ACF) where the endogeneity of training was explicitly taken into account	Productivity increase by 1.7% to 3.2% when the share of trained workers increase by 10% and wages responded by 1.0% to 1.7% respectively

								characteristics like education and gender		
										Slightly higher impact of training on nonmanufacturing compared to manufacturing productivity