

# Leveraging Human Capital Development for Successful Labour Mix Rationalization and Productivity Growth

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**Abstract:** Human capital development is at the centre of productivity growth. Increasing skilled workforce and reducing unskilled workforce is one of the key factors influencing productivity in manufacturing industry. As organizations grows and flourish, the labour mix must evolve to meet the changing workforce requirement. Poor execution of labour mix migration is detrimental to organization performance. This article seeks to explore the role of human capital development in successful labour mix rationalization for a manufacturing firm with heavy dependence on unskilled labour to deliver productivity growth. The findings revealed that human capital development occurred at every level ranging from production operator to manager. Labour mix migration focuses on increasing skilled workforce through skill development programs. However, this study has directed the focus to the importance of developing employees and the first line managers involved in the labour mix rationalization to ensure successful labour mix and achievement of productivity growth.

**Keywords:** Productivity, employees, human capital development

**Paper type:** Case study

## 1. Introduction

“Learning is like rowing upstream; not to advance is to drop back.”

-Chinese Proverb-

Continuous human capital development is one of the key factors influencing productivity growth. This is because it raises skill level of human capital in organizations. Increasing skilled workforce and reducing reliance on unskilled migrant workforce has been identified as key factors influencing productivity growth in Malaysia. Productivity is one of key pillar for Malaysia to achieve the status of developed nation by 2020. However, labour productivity in Malaysia is decelerating. This is partly attributed to manufacturing and service organizations failure to progress along the value chain away from labour intensive manufacturing activities (Menon, 2014). Labour intensive manufacturing activities utilizes huge number of unskilled labour. In Malaysia, unskilled labour is primarily migrant workforce. Unskilled migrant workforce has a negative impact on productivity. One percent increase in the share of immigrant workers results in an average of 0.6% decrease of labour productivity (Ahsan et al., 2014).

The government through the 11th Malaysia Plan has allocated substantial investments towards human capital development. The introduction of Technical and Vocational and Training (TVET) program to increase skilled workforce has facilitated the change despite its flaws. While the execution has room for improvement it has generated more skilled workforce in the country. The role of organization in the success of the TVET program is undeniable. The skilled workforce generated through various initiative must be successfully absorbed in the organization for it to translate to productivity growth. Equally important to building and embedding skilled workforce into the workplace is sustaining them.

Successful retention of skilled workforce is another aspect influencing achievement of productivity growth. Investment into learning and development will only bear fruit if an organization successful retain the skilled workforce. Hence, retention strategies must be in place as part of the labour mix rationalization initiatives. Low skilled migrant labour in Malaysia are not sustainable workforce in comparison to local labour. This is because their employment is subject to the approval of their temporary employment pass which is only renewable for a maximum of 10 years. As such investing into migrant labour who will leave the organization upon expiry of employment pass does not bode well for skill sustainability. Local labour is a more viable option from a skill retention perspective. However, recruiting and retaining local labour workforce is not an easy feat. World Bank Malaysia Economic Monitor 2015 report indicates a declining trend of Malaysians with below secondary education from approximately 45% to 30% of the Malaysian labour in 2014.

In a manufacturing environment, productivity is the relationship between the input into the production system and the output produced (Misterek *et al.*, 1992). Its reflects the relationship between multiple factors such as physical capital, technology, human capital, work organization which influences the conversion of input to output of a production system (Georgios *et al.*, 2014). Production is a complex system which is subject to influencers from internal and external environment acting on it. This is represented through Complexity Theory which contends that the randomness of a system outcome is

limited by the influences acting on and within it (Aldrich, 2008). Hence, an important part of achieving productivity is identifying all the inputs affecting the output produced. Labour is one of the factors influencing productivity. Even though, productivity is represented by cost in mathematic modelling it has many uncaptured façades. Mathematical equations such as Cobb Douglas function are unable to capture the different aspect of labour which is a gap in the existing body of productivity literature. Among which are skill level, employment type, workforce knowledge and motivation level. The right labour mix comprise of a combination of these factors.

Developing and increasing skilled workforce to accelerate productivity is the challenge undertaken by manufacturing firms including the case study organization. Fresh coat of paint on the aged facility and the blend of old and new structure speaks volumes of the organizations commitment to stay and grow. Navigating the maze of learning and development in a plant with more than fifty years of history is a daunting mission. Cultures and way of working are deeply ingrained in the organization. For more than a decade the organization has been relying heavily on unskilled migrant workforce. Every two years the organization experienced high turnover among the unskilled migrant workforce at circa twenty five percent which is then replaced with new migrant unskilled workforce. It is a vicious cycle as knowledge are not retained and adversely impacts firm's productivity. While this was manageable in the past it is no longer the case now. Recent business growth has placed tremendous pressure on the organization to develop sustainable and skilled workforce. The organization has mandated that a sustainable labour mix model enabling productivity growth must be embedded. This is a tall order for an organization with more than a decade old workforce model. Nevertheless, the timing could not be better due to its alignment to the nation's agenda.

This study aims to explore the role of human capital development in ensuring successful labour mix rationalization for a manufacturing firm with heavy dependence on unskilled labour and deliver productivity growth. It seeks to answer the following questions:

- (1) What is the role of human capital development in successful labour mix rationalization?
- (2) How does organization leverage on human capital development to supports labour mix rationalization?

This article contributes to the existing body of literature in the areas human resources development and productivity. Firstly, it seeks to enrich knowledge in human resources development by providing an in-depth understanding of migrating from unskilled labour dependent production operation to an optimum labour mix to achieve productivity growth at firm level. In addition, it helps to provide industry practitioner with guidance in managing human resources development to ensure successful labour mix migration.

## 2. Literature Review

Literature review enabled understanding of the labour mix, human capital development and productivity improvement. Labour mix, human capital development and productivity is interrelated. Both the labour mix and human capital development influences productivity outcomes.

### A. *Labour mix*

Labour in organizations comprises of employees with different skill level and employment type. International Labour Organization (ILO) defined skill level as referring to the complexity and arrays of tasks and responsibilities to be performed in a position. It is measured through formal education, informal on the job training and related experience. Employee skill level range from unskilled to skilled. Skilled workforce possesses specialized skill which allows them to operate specific machineries and manage related process. Whereas low skilled employees are those with ability to execute simple task which are manual. In manufacturing environment, employees with low education level and who does not possess technical skill are categorized as low skilled (Kim *et al.*, 2016). Meanwhile, the opposite is used to describe skilled employees. Employment type can be divided into two key categories which are nonstandard and standard work. Part time, temporary, short term employment, independent contractor and casual employment are categorized as nonstandard work and standard work refers to permanent fulltime employment (Kalleberg, 2000).

Organization strategic focus play an important role in determining the required skill mix (Sinclair and Collins, 1991). Similarly, the blend of standard and nonstandard work is also influenced by organization strategic decision (Ghosh *et al.*, 2009). Determining labour mix which includes employees with varying skill level and employment type is critical. It is not to be taken lightly as different combination of workforce have different influence on productivity. Skill mix with high reliance on low skill workforce is often associated with lower productivity level. Low skilled employees are driving down labour productivity in Malaysia (Rasiah *et al.*, 2015). Whereas research results have shown mixed result of varying combination of employment type. A research in 2009 involving 2293 organizations from various industry in US operating in highly competitive environment or low uncertainty demonstrated higher financial growth with higher percentage of nonstandard work (Ghosh *et al.*, 2009). Meanwhile another study in 2006 involving 1597 Spanish manufacturing organizations in Spain found that when the percentage of temporary employment is low there is positive impact on the gross operating margin and vice versa where temporary employment is overused (Roca-Puig *et al.*, 2015).

This highlights the importance of ensuring the right mix is in place to deliver the organization strategic direction. Determining the right skill mix is on part of the equation. The real task begins at acquiring the right talent or building internal employee skills to meet the organization requirement is a crucial part of this labour mix migration.

### B. *Human capital development*

The required workforce skill represents human capital in an organization. Improving workforce skill level increase the value of human capital. Human capital development is an important component of successful labour mix migration. It commences outside of the workplace and continues throughout an employee's work lifecycle. Recruitment commences with clear definition of the required skill mix comprising of the number of skilled workers, semi-skilled workers and low skilled workforce required. In addition to this it is important for organization to identify the key requirements for each of the skill level. Employees are assigned roles in the production floor based on the skill requirement of the job and the workers skill level (Koltai and Tatay, 2013).

Productivity improvement is closely associated to skill development. When other parameters such as operating environment and machine performance is stable improving employee's skills is the only method to improve productivity (Tervo *et al.*, 2008). Optimum organizational productivity is achievable through worker skills enhancement through training program compatible to the manufacturing technology (Mital and Pennathur, 2004). According to International Labour Organization in addition to formal education or training skills can also be acquired through years of experience and informal training.

Sponsorship from top management is required to support skills development and achievement of the targeted skill mix (Sinclair and Collins, 1991). In addition, training and development methodology also influences learning effectiveness. Informal learning closely associated to employees work environment positively influence skill improvement of low skilled workers (Kim *et al.*, 2016). These are important factors to note as it indicates that top management buy in as well as the mode of training employed will strongly influence the effectiveness of human capital investment initiatives.

### C. Productivity improvement

Productivity is deemed as one of the key factors utilized to assess organization performance (Teng, 2014). In manufacturing, productivity is the relationship between an input and output into the system. In a growing organization, productivity growth is experienced when increase in input is lesser than increase in output (Mistereck *et al.*, 1992). Measuring productivity in a manufacturing system is complicated as there are specific elements such as labour productivity, level of technology utilized, efficiency of the process and product quality standard connected to it (Shahidul and Shazali, 2011). Addressing any of the elements will influence productivity in a manufacturing system. Labour is the only factor interacting with every element in the manufacturing system.

Labour productivity is a function of various controllable and uncontrollable factors (Ibbs *et al.*, 2007). Often labour cost is used to represent the labour factor in the labour productivity measurement. However, at times labour cost does not represent an employee's skill level as there are other factor influencing employees cost such as tenure in organization which does not necessarily commensurate with the employee's skill. Employee skill level has a significant relationship on labour productivity (Rasiah *et al.*, 2015; Nasirzadeh and Nojedehi, 2013; Shahidul and Shazali, 2011; Mital and Pennathur, 2004). Thus, creating a concern on the accuracy of productivity measurement when labour cost is used to represent the labour factor. A recent quantitative study involving medium and large manufacturing companies in China found that training increases productivity (Liu and Lu, 2016).

Studies providing insights into labour mix transformation to the right labour mix to drive productivity is limited. This is the research gap which will be addressed in this study. This study will add to the existing body of knowledge and provide practical insights to industry practitioners embarking on journey to achieve productivity improvement through migration of unskilled labour dependent production operation to the right labour mix.

### 3. Methodology

The purpose of this exploratory single case study to explore the role of human capital development in successful labour mix migration and productivity growth. The study was conducted in a manufacturing company located in the state of Selangor, Malaysia between 2017 to 2018. The company was selected due to its high reliance on low skilled migrant labour. Additionally, the organization approved for the case study to be conducted by the researcher subject to confidentiality agreement. The selected research design enables the exploration of the complex phenomenon instead of being restricted by the objective approach of quantitative methodology. Data was collected through semi structured interviews, observation, focus group discussion and archival data in the form of internal company document. The population consist of management team and new employees recruited into the company. Purposeful sampling were utilized to select participants who were involved in the labour mix rationalization initiative in the selected manufacturing environment. The identified participants were contacted through e-mail inviting them to participate in the study. They comprise of four midlevel to senior managers for semi-structured interviews, five midlevel executives to first line manager for semi structured interview and five new skilled employees for a focus group discussion. Triangulation is employed by comparing the interview data from the manager who sets the direction, the first line manager who are the executor, the new skilled employees feedback, observations notes, document analysis and the productivity data gathered through the study.

### 4. Findings

The findings of the study are discussed in two sections. The first section discusses the role of human capital development in ensuring successful labour mix rationalization in a manufacturing firm with heavy dependence on unskilled or low skilled labour. Whereas the second section deliberates on how the organization manages human capital development to its advantage.

#### A. *Human capital development role*

Human capital development plays a myriad of role in the organization as it undergoes the labour mix migration. The organization has a clear direction of the role of human capital development in the overall migration early on. For the company it plays significant role at recruiting, capability building and retention as follows;

- **Recruiting:** The type of training program will determine the type of the talent recruited in the organization. A comprehensive training program and structured career development program enabled the case study organization to attract and recruit inexperienced talent from the labour market.
- **Capability Building:** Strong sponsorship of leadership team and disciplined execution of the established training program ensured controlled employee development and ensure that the risks were managed effectively. Employees motivation were also managed throughout the process through coaching and engagement sessions.

- Retention: The comprehensive assessment and confirmation process as well as adherence to the committed career progression plan has helped the organization to retain the confirmed skilled employees.

The role of human capital development in successful labour mix migration cannot be underestimated. Understanding this was the key to the company's successful labour mix migration implementation discussed below.

### *B. Managing human capital development*

Human capital investment was identified as one of the key factors of successful labour mix migration. The organization did not place much emphasis on this aspect at the beginning of the labour mix migration program. However, through their experience during the migration the participants emphasized the significance of the quality of training program and long-term career development to this process. The management team collectively agreed that their existing training program was not suitable to build the capability of the new skilled employees. One of the senior manager commented

“...we never have the training module before...this is the challenge”

The ‘sink or swim’ approach of on the job training with a senior operator without a structure was deemed inadequate. A full regime of training comprising of theoretical training, on the job training, competency assessment, comprehensive training material and trainer expertise was determined as crucial to successful recruitment and onboarding of the new employees. The management team revamped and established a new training program from the new skilled employees recruited into the organization.

Furthermore, upon interviewing the skilled labour newly recruited into the organization long term career development and internal career path emerged as an integral factor influencing their decision to work in the organization as well as retention. The future career opportunity communicated by the organization to the targeted external talents served as attraction for them to join the organization.

### *I. Training*

The degree of training provided to an employee directly influences productivity (Singh and Mohanty, 2012). Documentary evidences shared by the management team shed light on the overall training program structured for the newly recruited skilled employees. Training program for new hires were divided into classroom training attended prior to on the job training in production. The new skilled labour recruited for the migration program were secondary school leavers who went through and external three months technical certification program. The certification program is a state government sponsored program aimed towards upskilling youth in the Selangor state. The availability of this training was identified through the resourcefulness of the project team. This form of government facilitation and support was beneficial to the organization especially in an environment where local worker recruitment is a challenge. The support has provided the organization with a reliable source of trained skilled workforce. The technical certification program includes modules such as basic mechanical and electrical knowledge, process improvement tools, communication as well as quality and safety modules. It is a generic program targeted with equipping the trainees with basic knowledge. The

final part of the training includes a customized training from the organization introducing the production process, quality and safety guidelines to the employees. It is a training module developed specifically for this group of new hires and modified according to the areas they will be assigned for on the job training. The new hires are assessed at every stage on their understanding and knowledge retention.

Upon completion of the classroom training, the new hires commence on the job training in the factory environment. The first couple of weeks the new hires spend part of their day in the plant for familiarization and observation while the rest is spent learning the theoretical knowledge of specific machine operation. The trainers are internal trainers and materials for training comprises of standard operating procedure as well as process knowledge. This is followed by another the three months on the job training under the supervision of an appointed trainer. Appointed trainers are qualified senior operators who guides, coaches and monitors their performance. The first line managers and middle management supervises the overall process and ensure that the training schedule are adhered to.

Readiness of the training material and time constraint was key concern for the organization. However, it was clear despite all the concerns the organization was able to prepare for the first group of skilled trainees joining the organization. This was encored by another senior manager during the interviews

“...ensuring that we had built the necessary skill of the people up before they even enter the business is something that I think has been quite successful... I think the second piece is having a very structured onboarding program once they come in to the plant so we have been structured in ensuring that they are not then thrown straight into different roles in the production environment... spending adequate time in a classroom environment to understand some of the processes, that we have got standard operating procedures for them to be able to follow as opposed to sending them out on to the production floor with limited supervision, with limited experience and expecting them to be able to run you know key processes with key equipment’s in the plant”

It was also observed that the training program has given the employees with right knowledge and confidence in their ability. Interviews with the participants revealed the importance placed by the management as well as the benefit of the training program. One of the manager’s revealed that he was impressed with the new employees who graduated through the program because of their ability to operate the line correctly within the given time which is contrast to past experiences.

The role of the appointed trainer which most of the time is the senior operators as well as coaching and guidance by the first line managers cannot be underestimated. Research discovered that measuring technical skill competency change by supervisor can negatively influence low skill workers proficiency improvement (Kim et al, 2016). The management team understood the significance of this issue but addressing this was more challenging than addressing the issue of training materials. This is because coaching and training skills requires time to acquire and master. Even though the management understood its significance but teething issue still appears given the time constraint mostly in terms of coaching. In this circumstance the approach by the organization was to proceed with the plan and coach the first line managers during the process. The organization did not have the time to wait for everything



to be ready. Hence, adapting and flexing the plan as new information comes to light was decided as the best option. At the end of the training of the first group a separate training program was established to build the skill level of the first line managers. The organization also hold monthly get together with these employees to gather feedback for improvement and address any pressing issues affecting employee engagement.

The participants also acknowledged the lack of resources to manage the overall training program and limited capable trainers to execute the plan. Hence, the approach to training was modified. The employees were recruited in groups and they join in an interval of three month from each group. Every group were assigned to a specific process area in a line thus reducing the burden of preparing the training material and addressing the shortage of trainers. The organization did not underestimate the volume of work involved in executing this training for all new skilled employees being recruited in the organization. Additional resource in form of training personnel were recruited to support the management of the training program. Furthermore, the management recognizes the training materials will continue to evolve throughout the program based on the feedback received and learnings from skilled employees.

It was glaringly obvious that training and onboarding should not be taken lightly. It played a critical role in ensuring that the new hires transition successfully into the skilled employees role. The success of the training execution is dependent on the plan, material, trainers and the management team responsible for the execution. The role of government in providing support through government sponsored training cannot be underestimated. It has proved to be most helpful for the organization.

Lastly tracking the effectiveness of the training through structured assessment is crucial to determine the success of the training program which will directly influence the success of the migration. For the organization the success of the migration was measured through skilled employee retention rate and quality improvement measures as this was identified as key factors affecting productivity of the manufacturing system.

## *II. Career development opportunity*

The importance of career development opportunity was shared from different perspective by the management team versus the employees. The management team views creating of career development opportunities as key to retention and means to sustain the capability in the organization. This was a joint effort between the operations and human resource function. One of the senior managers commented the importance of focusing on long term employee investment as well establishing a structured approach to monitor their growth as the next step. A two years career development framework was established and shared with the newly hired employees. The mechanism to learn, grow and earn higher salary was explained to them. Feedback from the newly recruited skilled employees highlighted the significance of internal career development opportunity to them. It became more obvious during the various engagement session that the career development opportunity was one of the attractions for them to join the organization. The thoughts shared by the new skilled employees revealed the hope for a better future which is a strong appeal. Therefore, it is vital for the management team to closely adhere to career development framework that was shared.

Capability building through structured training program and long-term career development have emerged as key factors that can be leveraged to attract and retain skilled employees. As such management must review existing training approach within their organization to assess whether it meets the requirement. It has been established that new hires employed as skilled employees must be given the right training to equip them with the necessary skill as the machineries and processes differs from one manufacturing facility to another. Secondly, the organization has structured an internal career pathing creating opportunity for the new hires to build internal capability and progress in the organization. New generation of skilled employees are not content with remaining in the same role without any progression. They are interested in future career development opportunities. This need must be fulfilled and the organization has set out to provide more clarity around internal career opportunity once the need was shared during the recruitment process and engagement session. The pilot labour mix migration at the designated process area in the production line of the company has yielded positive outcome. All the confirmed skilled employees at the area were successfully retained and the quality metrics at the line improved after the trained skilled employees were assigned to the line. This clearly indicates that the steps taken by the company were effective to increase skilled workforce.

### **5. Managerial Implication**

Human capital development is essential to productivity improvement. The labour market in Malaysia presents a complex challenge to industries seeking to increase their productivity. Workforce stability is a source of strength of the organization due to the vast amount of unrecorded rich organizational knowledge retained by skilled employees. However, high reliance on foreign low skilled labour has left the knowledge with limited number of skilled workforce. This places organizations at high risk which should be mitigated. However, organizations are wary of changing the existing labour mix due to the challenges of recruiting local workforce, building internal capability and employee retention. This study will provide insights to managers seeking to reduce reliance on unskilled or low skilled workforce and achieve successful labour mix migration.

It was verified through the case study at the organization that the human capital development is an important piece of the labour mix migration puzzle. Industry practitioners in organizations intending to embark on this journey must obtain buy in from their leadership team. This is because human capital development is a long-term investment. Sufficient resources in the form of time, budget and experienced personnel must be invested to ensure that success of the migration. This study highlights the importance of leadership team sponsorship of the program to successful labour mix migration. In addition to this, managers embarking on this journey must have a clear success measures to ensure that the human capital investment are bearing fruit. In this case, turnover reduction and improvement of quality performance were utilized as success measure.

The managers executing the change must have a clear understanding of the targeted workforce and the limitation in the market. This case study highlights the importance of understanding internal gaps within the learning and development system before moving the address and overcome it. Therefore, managers are recommended to carry out an internal audit on existing internal training program and career development program for skilled employees. This must be compared against the skilled

employee's expectations to ensure that the needs are met. Meeting their expectations will help to improve managers ability to recruit, build skill and retain the skilled employees.

This case study provides human resource practitioners with clear guideline on how the organization executed the human capital development program and build skill at each stage within the limitations that it was operating in. The important learnings that practitioners can adopt as per following;

- Segmenting the change to manageable size: Implement a phased labour mix migration from one area to another
- Identifying success measures to measure effectiveness of training program; Competency assessment and line performance
- Monitoring program; Employee engagement sessions and feedback from management team
- Leveraging on internal skilled employees for trainer resources
- Building first line managers capability to coach skilled employees through the program

Long term career development program for production employee is an important factor for skilled employee's long-term retention. In the past development program has been focused towards knowledge workers. However, it was discovered through this case study that skilled employees in production are attracted by career progression opportunity provided by the organization. They are not keen to stay stagnant in the skilled operator without any growth opportunity. Hence, managers seeking to increase skilled local employees as part of their labour mix migration should develop an internal career development program and deliver on this commitment. Continuous learning opportunity and internal promotion tied to employees' performance are ways to fulfil their expectation.

In addition to this, a recommendation for practical application will be for organization to invest in the building the leadership skills of the first line leadership team and the trainers particularly in training, coaching, direction setting, communication and feedback. Human resource practitioners should focus on developing managerial capabilities to improve leadership quality and achieve successful migration. This was identified as one of the more difficult capability to build during the labour mix migration process as it is a soft skill which requires time to develop. A strong execution comprising of competent trainers and first line management will ease the migration process. As such organization who are not pressed for time can spend time building these capabilities before embarking on the labour mix migration journey.

## 6. Conclusion

In summary, this case study highlighted the importance of human capital investment to successful labour mix migration. It highlighted the role of effective onboarding and training as well as establishing long term career development opportunity for skilled employees. Workforce stability is not a distant dream.

However, substantial effort is required to recruit the right talent, build their capability and provide them with internal opportunity to retain them in the organization. The change process must be undertaken in stages over a planned period. Throughout the change process predetermined success measures must be monitored to assess the effectiveness of the migration. This case study will benefit

manufacturing organization seeking to achieve a more sustainable workforce by reducing reliance on foreign unskilled labour and deliver productivity growth.

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