

A FRAMEWORK TO ENHANCE PRODUCTIVITY THROUGH HUMAN ATTITUDES

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ABSTRACT

Government expenditure is rising yearly. Maintenance expenses of government building and their services also contributes to this expense. So, productive maintenance within the government sector is increasingly required in order to optimise the costs on maintenance and its output. Management of good attitudes within the human resource of public sector's maintenance departments is an essential factor to enhancing productivity of building maintenance. Thus, it is necessary to develop and manage good attitudes to achieve productive maintenance. Hence, the aim of the research is proposing a suitable framework for attitude management and development in public sector organizations in Sri Lanka. The importance of the attitudes and the reasons for difficulty in developing attitudes is discussed in the paper. The attitude of an employee has been identified under four basic categories and a qualitative research approach was adopted to accomplish the research objectives through semi-structured interviews involving 15 respondents under 3 cases. Cross-case analysis was used to analyse findings and finally a framework was developed to manage good attitudes of staff. Productive maintenance refers to maximum and optimum output from minimum resources and productive human resource plays the most important role. It is made up of three key competencies; good skills, good knowledge and good attitudes. Good attitudes are important in maintaining other two competencies. Finally, a framework for attitude management and development have been developed based on reliable suggestions for proper attitude management within maintenance departments of public sector organisations and several recommendations were suggested to overcome current barriers in the industry.

Keywords: *Human Attitudes; Maintenance Department; Productive Maintenance; Public Sector Organisations.*

1. INTRODUCTION

Building maintenance is the ongoing process of sustaining operations and performance of building systems in accordance to the intention of occupant's changing needs, and optimum efficiency levels (Portland Energy Conservation Inc., 1997). Maintenance management encompasses many functions that relating to keeping something in a proper condition without breakdowns. Further it can be described as facilitating the environment to keep operable to standards required by the users (Allen, 1993). Every person is a manager; knowledge, skills, and attitudes are the key competencies of management (Bandaranayake, 2012). In the training and education context, competency is described as a measurable set of knowledge, skills, and attitudes that need to complete a task

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efficiently and effectively (Hoe, 2017). These are the main factors affecting for effective maintenance of building services by human resource (Tsang, 2002).

Attitudes are very important for the manager's value system and beliefs towards self, task, and others in the organisation (Carmeli, 2003). Attitudes are somewhat emotional, but essential, because of acquisition of knowledge and skills and determination of how the manager applies their techniques and knowledge in total management including non-core activities depends on the attitudes. These non-core activities are basically consisting with building maintenance works. Basic attitudes of an employee are generally integrated with feelings, thoughts, and behaviours. Thus, attitude management is important to maintenance employees as they determine human behaviours and provide insight into the motivating values of them with their beliefs. All actions that perform by human resource generally associate, good knowledge with head, good skills with hands, finally good attitudes with heart (Hoe, 2017).

Sri Lankan private sector companies give high preference for both educational and professional qualifications including attitudes when looking for qualifications of candidates for career opportunities (Wickramasinghe, 2007). Public sector organisations generally operate without considering market competition. Productivity of public sector organisation's maintenance departments and employee individual performances are low compared to private sector organisations of the same industry in Sri Lanka (Dhammika, 2013). Basically, this is due to lack of good attitudes of public sector staff (Prabaharan and Panchanatham, 2016). It is very essential to change the mind-set of people in public sector organisations in Sri Lanka. Contribution of most management and career development programs basically focus on knowledge and skill development, since it is much harder to teach attitudes (Hoe, 2017). There is low contribution by public sector in order to manage and develop attitudes including maintenance departments. Hence, the aim of the research is to analyse the current status of Sri Lankan public sector organisations and develop a framework to enhance the productivity of building maintenance in public sector organisations of Sri Lanka through human attitudes.

2. LITERATURE REVIEW

2.1 BUILDING SERVICES AND THEIR IMPORTANCE

Building Services are the main supportive system of the building in order to achieve the needs of the occupants who work or live within the building premises (The Chartered Institution of Building Services Engineers, 2018). Having quality building services are one of the key features of productivity of the organisation. Furthermore, authors have mentioned that quality building services pave the way for a comfortable built environment. According to Hensen and Lamberts (2012), to achieve high individual human productivity, good building services are needed. As mentioned by Mendes *et al.* (2001), building services are needed to achieve building performance mandates and increase the quality of the building and services provided by the building. It will increase the employee and customer satisfaction by supplying quality building integrated services (Atkin and Brooks, 2015). Each and every physical organisation is situated in buildings (Fuentes *et al.*, 2010). Every work that need to carry out in order to achieve organisational goals and objectives are handled and controlled within building premises. Improper maintenance and operations of building services lead the path for energy wastages, poor building performance, tenant complaints, and further environmental damages (Neale *et*

al., 2010). Efficient and effective timely maintenance and accurate management of building services and buildings prevent their deterioration and keep them in a productive condition. Maintenance of building services is the most important factor in the management of building services. Furthermore, the author has mentioned that each and every system must have to maintain well in order to maximum output and performance from them.

Productivity is the efficient use of resources, labour, capital, materials, energy, information, in the production of various goods and services. Productive maintenance refers to combination of two major elements, efficiency in maintenance and effectiveness in maintenance (Keh *et al.*, 2006). The optimum collaboration of both efficiency and effectiveness is a must in achieving optimum productive maintenance (Manzoor, 2011). Efficient maintenance refers to the quality of being able to do a task by using each and every optimum resource input (Sheth and Sisodia, 2002). Further authors have mentioned that it can be included minimum input of time and effort to a certain maintenance work or doing things right. Effectiveness refers to degree in which an organisation realizes its goals and it refers to the effectiveness of any work. Effective maintenance refers to capability of producing the desired output in a certain time or doing the right thing.

Productive resources are essential in productive maintenance, identified as, productive physical resources, productive informational resources and productive human resource (Tavitiyaman *et al.*, 2011). Among them, productive human resource is most essential to achieve effectiveness and efficiency in productivity and it is the most important resource to be managed and optimised. There are key competencies that needed to be accomplished by a productive human resource which identified as good skills, good knowledge and good attitudes (Baartman and de Bruijn, 2011). Among these key competencies, good skills can be developed by practice, good knowledge can be developed by education (Bandaranayake, 2012). Development of good attitudes is the most difficult factor and optimisation of good skills and good knowledge is also have impact from the good attitudes of human resource. Therefore, attitudes are the most difficult and important factor to be developed in achieving productive maintenance as the final output. Good attitudes of human resource divided into four main categories; towards organisation; towards people; towards job and towards intimate (Bandaranayake, 2012). Collaboration of these four types will enhance good attitudes of a human resource.

Achieving optimum maintenance output from the maintenance tasks performing in the organisation refers to productive maintenance (Chan *et al.*, 2005). Minimum resource allocation, standard procedure accomplishment, minimum wastages in completing the tasks should be addressed accurately (Al-Najjar and Alsyouf, 2000). Productive maintenance maximises the equipment effectiveness throughout the lifetime of the equipment. To achieve productive maintenance, it is needed to ensure the efficiency and effectiveness of each task of maintenance activity with respected to all resources (Almeanazel, 2010). Efficient maintenance refers to use of minimum resources to accomplish the maintenance job in maximum productivity by adopting all standard procedures that should be adopted (Quintana and Ortiz, 2002). Effective maintenance refers to conducting of accurate maintenance activity suits for situations in accordance with the standards given in an accurate way (Ismail, 2014).

According to Ajzen (2005), “attitudes are a disposition to respond favourably or unfavourably to an object, person, institution or event”. The tendency to react and respond

negatively or positively toward an idea, person, object or situation is also a definition of Attitudes (Redman *et al.*, 2012). Furthermore, authors have stated that attitudes influence choice of action perform by individuals according to the way of responding to challenges.

2.1.1 Human Resource Management towards Productiveness

Human resource management is a basic function of the strategic policy of an organisation (Michael, 2006). Further, author has mentioned that Human Resource is an individualistic resource and it should manage individually by common systems. Being recognised as an asset rather than a cost is, for ordinary employees, admittedly a step in the right direction (Inkson, 2008). Generally, in human resource management, it is a must to go through individual task analysis and individual development. Further, authors have mentioned that through analysis, the individual requirement of skills, attitude and knowledge can be identified. Development of good and positive attitudes is a must in productive human output (Wright *et al.*, 2003). Furthermore, author has mentioned that human attitudes have a direct impact with productiveness of organisation. There is a direct relationship between employee attitude and productiveness of job, employee attitude is basically based on employee job satisfaction towards organisation (Saari and Judge, 2004).

In real nature, nothing man-made is indestructible, but doing repairs at required intervals will manage its performance while extending useful life and it is called maintenance (Kelly, 2006). Further author has mentioned that maintenance is a definition for those activities which needed to upkeep a facility in a status of as built while continuing its original productive capacity. Attitudes of the maintenance workers have a high considerable impact on the behaviour of the organisation or behaviour of the business cycle in achieving objectives (Wright *et al.*, 2003). Further authors have mentioned that human attitudes include behavioural, cognitive and affective components and these attitudes are very important in employee participation for their intended job roles.

Practising proper attitude management practices within an organisation will ensure the loyalty of the workers towards the organisation and their job roles. It will lead to achievement of competitive advantage in the organisational context and achievement of organisational objectives and goals easily (Ordóñez de Pablos and Lytras, 2008). Reduction of wastages and achievement of efficiency and effectiveness in maintenance broader aspect (Pfeffer, 2010). Proper attitude management practices will enhance high individual performance ratio achievement incensement of job performances and organisational performance. It will Increase the loyalty of workers and customers by maintaining an appropriate working environment (Gagné, 2009). Finally, it will lead to reduction of unnecessary costs and wastages on building services (Birdi *et al.*, 2009).

According to the Ministry of Finance (MOF) Sri Lanka (2017), Sri Lankan government sector covers all most all the industries in Sri Lanka. Further, MOF (2017) stated that, the expenditure of the public sector is higher than the revenue of the public sector organisations. Performance measurement, individual performance measurement and analysis of government employees are not practising well in Sri Lanka (Dhammika, 2013). Furthermore, the author has mentioned that the productivity of public sector organisations and employee individual performances are low respecting to private sector organisations of the same industry in Sri Lanka including maintenance departments. It is very essential to increase the productivity of the employees in public sector (Pidd, 2012). According to author, it can be easily done by making an appropriate working environment, with productive building service. It is essential to increase the maintenance

productivity in public sector organisations, in order to have optimum output (Almeanazel, 2010). Therefore it is essential to develop and manage attitudes of maintenance staff of public sector in Sri Lanka (Velnampy, 2008). Furthermore, author mentioned that currently there are no proper system and weight for the field of attitude development and management even though it is essential.

3. RESEARCH METHOD

In order to achieve the aim, which is to develop a framework to enhance attitudes and ensure attitude management of people in the field of maintenance in building services of public sector buildings, a qualitative research approach has been undertaken. Multiple case studies have been conducted in 3 public sector buildings. Case A is one of the main organisations, which directly supports the international trade and foreign affairs of Sri Lanka, Case B organisation is an important government organisation which contributed to control the finance of the country. Case C is a leading government organisation under local authority. It contributes to control the infrastructure to a certain area and five respondents were selected for data collection from each organisation. 5 semi-structured interviews were conducted in each case with management and supervisory level workers to obtain their opinion. Altogether, 15 interviews were conducted. Data analysis has been undertaken by using the manual data and cross case analysis technique. Scope of this study is limited to maintenance departments of public sector organisations. A framework has been developed to achieve effective human attitude management and development by going through all literature, collected data and generated information, by covering all areas of job roles.

4. DATA ANALYSIS AND FINDINGS

All the buildings are leading government sector buildings under ministries and local authorities which built recently. Building service maintenance is carried out by the in-house maintenance staff under the maintenance division of the organisations. Table 1 shows the details of the selected cases.

Table 1: Selected case details

Description	Case A	Case B	Case C	
No. of buildings	1	1	2	
Building Type	Office	Office	Library	Office
No. of stories	12	5	5	4
Year started operations	2010	2015	2009	2012
Years in operation	8	3	9	6

4.1 IMPORTANCE OF PRODUCTIVE MAINTENANCE

Maintenance is everywhere in buildings and their systems and in order to run an organisation smoothly, doing maintenance correctly is important (Lind and Muyingo, 2012). As an initial step of developing the framework for improving positive attitudes of maintenance staff of public sector organisations for better attitude management and productive maintenance, interviewees were questioned about the importance of maintenance and productive maintenance for an organisation. All respondents demonstrated similar meanings on maintenance as a very important process for any type

of an organisation or building to have a higher productivity from their operations. Maintenance prevents breakdowns and further it will help to achieve organisational objectives as planned by reducing operational breakdowns and compromising in operational works. Furthermore, maintenance of building systems creates a quality and comfortable working environment for workers.

4.2 RELATIONSHIP BETWEEN GOOD ATTITUDES AND PRODUCTIVE MAINTENANCE

Productive maintenance is taking an optimum output from the maintenance activities that is performed within the organisation. For productive maintenance, it is a must to have productive resources. Basically, productive resources are integrated with, productive physical resources, productive human resources and productive informational resources (Tavitiyaman *et al.*, 2011). The productive human resource plays a key role among the productive resources. To be a productive human resource, there should be three key competencies; namely, skills, knowledge and attitudes. All respondents asserted similar ideas. They highlighted attitudes as the most important factor among the key competencies as it is connected with interpersonal behaviours and the good attitudes are the most difficult factor to be developed in humans, among the three factors, good skills, good knowledge and good attitudes. Respondent 'IC-C-03', stated that "*attitudes differ from one person to another. Sometime living background, personal thoughts, constitutional factors differ from person to person, therefore it is difficult to develop*". Respondents 'IC-A-04' and 'IC-B-01' also stated the ideas similar to respondent 'IC-C-03'. Respondent 'IC-A-01' stated that "*changing the interpersonal views of people is difficult*". Respondent 'IC-B-04' delivered similar ideas with respondent 'IC-A-01'. Further respondent 'IC-A-02' stated that "*Changing the disciplines and feelings of people is difficult*". Six respondents out of fifteen agreed with the idea of changing the traditional thinking, personal habits and behaviours are difficult.

4.3 ATTITUDE DEVELOPMENT THROUGHOUT THE JOB ROLE OF MAINTENANCE STAFF

As mentioned by the all respondents, transfers and appointment for the jobs in public sector is mainly done by government acts and procedures. Therefore, preliminary stages of human resource management steps are not followed generally. In development of attitudes of maintenance staff of public sector organisations is difficult to do by going through human resource management functions. It can be easily done by covering all aspects, by attitude management through following categorisation which was identified through literature. They are developing attitudes about organisation, about job, about people around, and developing intimate attitudes. All respondents agreed to the above categorisation and following would be the strategies that can adopt in order to develop attitudes on above basic categorisation. The declared strategies are as follows by the relevant respondents to develop the attitudes about the organisation in maintenance departments of public sector organisations (see Table 2).

Table 2: The declared strategies by the respondents to develop attitudes about the organisation

DESCRIPTION	IC-A-01	IC-A-02	IC-A-03	IC-A-04	IC-A-05	IC-B-01	IC-B-02	IC-B-03	IC-B-04	IC-B-05	IC-C-01	IC-C-02	IC-C-03	IC-C-04	IC-C-05
1 Conducting review meetings	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
2 Appreciation on what they have done			√		√			√			√				
3 Giving bonuses and incentives	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
4 Good grievance handling procedure for workers			√	√		√					√	√		√	√
5 Welfare activities for workers	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
6 Supplying occupational medical facilities and insurance	√						√					√		√	
7 Arranging flexible work shifts	√		√		√	√		√		√					√
8 Arranging workshops on professional development secessions	√		√	√	√						√	√		√	
9 arranging proper complaints management system			√	√			√		√						
10 Giving organisational product benefits	√	√	√	√	√			√							

Table 3 shows the declared strategies by the respondents of three cases that should adopt to enhance the attitudes towards other people in maintenance departments of public sector organisations

Table 3: Strategies that should be adopted in order to enhance the attitudes of the employees on other people

DESCRIPTION	IC-A-01	IC-A-02	IC-A-03	IC-A-04	IC-A-05	IC-B-01	IC-B-02	IC-B-03	IC-B-04	IC-B-05	IC-C-01	IC-C-02	IC-C-03	IC-C-04	IC-C-05
1 Arranging meetings	√		√		√	√				√	√	√		√	√
2 Arranging get together and functions	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
3 Arranging charity works	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
4 Conducting training programmes	√		√	√		√			√	√	√			√	√
5 Conducting team works	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
6 Arranging trips and entertainment events	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

Table 4 shows the declared strategies by the respondents of three cases that should adopt to enhance the attitudes on job role of people in maintenance departments of public sector organization

Table 4: Strategies stated by respondents to enhance attitudes on job role

DESCRIPTION	IC-A-01	IC-A-02	IC-A-03	IC-A-04	IC-A-05	IC-B-01	IC-B-02	IC-B-03	IC-B-04	IC-B-05	IC-C-01	IC-C-02	IC-C-03	IC-C-04	IC-C-05
1 Giving required authority and responsibility	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
2 Giving decision making power	√	√	√		√	√	√	√		√	√		√		√
3 Making flexibility in job		√	√	√		√		√	√			√	√		√

DESCRIPTION	IC-A-01	IC-A-02	IC-A-03	IC-A-04	IC-A-05	IC-B-01	IC-B-02	IC-B-03	IC-B-04	IC-B-05	IC-C-01	IC-C-02	IC-C-03	IC-C-04	IC-C-05
4 Allocating required number of subordinates	√	√					√	√					√		
5 Maintaining good facilities related to job	√	√		√	√			√	√	√	√	√	√	√	√

Table 5 shows the declared strategies by the respondents that should adopt to enhance the intimate attitudes of people in maintenance departments of public sector organisations.

Table 5: Strategies that should be adopted to develop intimate attitudes of employees

DESCRIPTION	IC-A-01	IC-A-02	IC-A-03	IC-A-04	IC-A-05	IC-B-01	IC-B-02	IC-B-03	IC-B-04	IC-B-05	IC-C-01	IC-C-02	IC-C-03	IC-C-04	IC-C-05
1 Conducting review meetings		√	√	√	√	√		√	√	√	√	√	√	√	√
2 Allowing on the job training	√	√	√	√	√		√	√	√			√		√	
3 Conducting CPDs and workshops	√	√	√			√	√	√		√	√	√	√	√	
4 Personal helping programmes	√					√		√						√	√
5 Arranging self-motivation programmes		√	√	√	√	√	√	√	√				√	√	√

4.4 DEVELOPMENT OF THE FRAMEWORK

Framework was developed to enhance management of attitudes within the maintenance departments of public sector organisations by considering on the findings from the research (see Figure 1). Framework is bounded by basic four types of attitudes that a worker of a maintenance department of public sector organisation is having. Importance of good attitudes of maintenance workers of public sector organisation identified and further, the strategies to develop attitudes also identified in the top section. At the bottom section, why it is difficult to develop attitudes, current barriers in attitude management and development in maintenance departments of public sector organisation and strategies to overcome the barriers are identified and showed.

5. DISCUSSION

The conceptual framework shows the relationship of productive maintenance and the good human attitudes. As mentioned by Bandaranayake (2012), Human attitudes of any kind of a employee can be basically divided in to the mentioned categories as, attitudes about organisation, attitudes about job role, attitudes about people and finally intimate attitudes. It was confirmed by every respondent and every respondent stated similar meanings on, by these main four types, every stage and aspects of employees are covered. Productive maintenance refers to achievement of efficiency and effectiveness in maintenance works. All respondents stated similar meanings on, productive human resource is essential in achieving maintenance productivity and, good attitudes are essential to be a good human resource. Building Services are the main supportive from the building in order to achieve the needs of the occupants who work or live within the building premises (The Chartered Institution of Building Services Engineers, 2018).

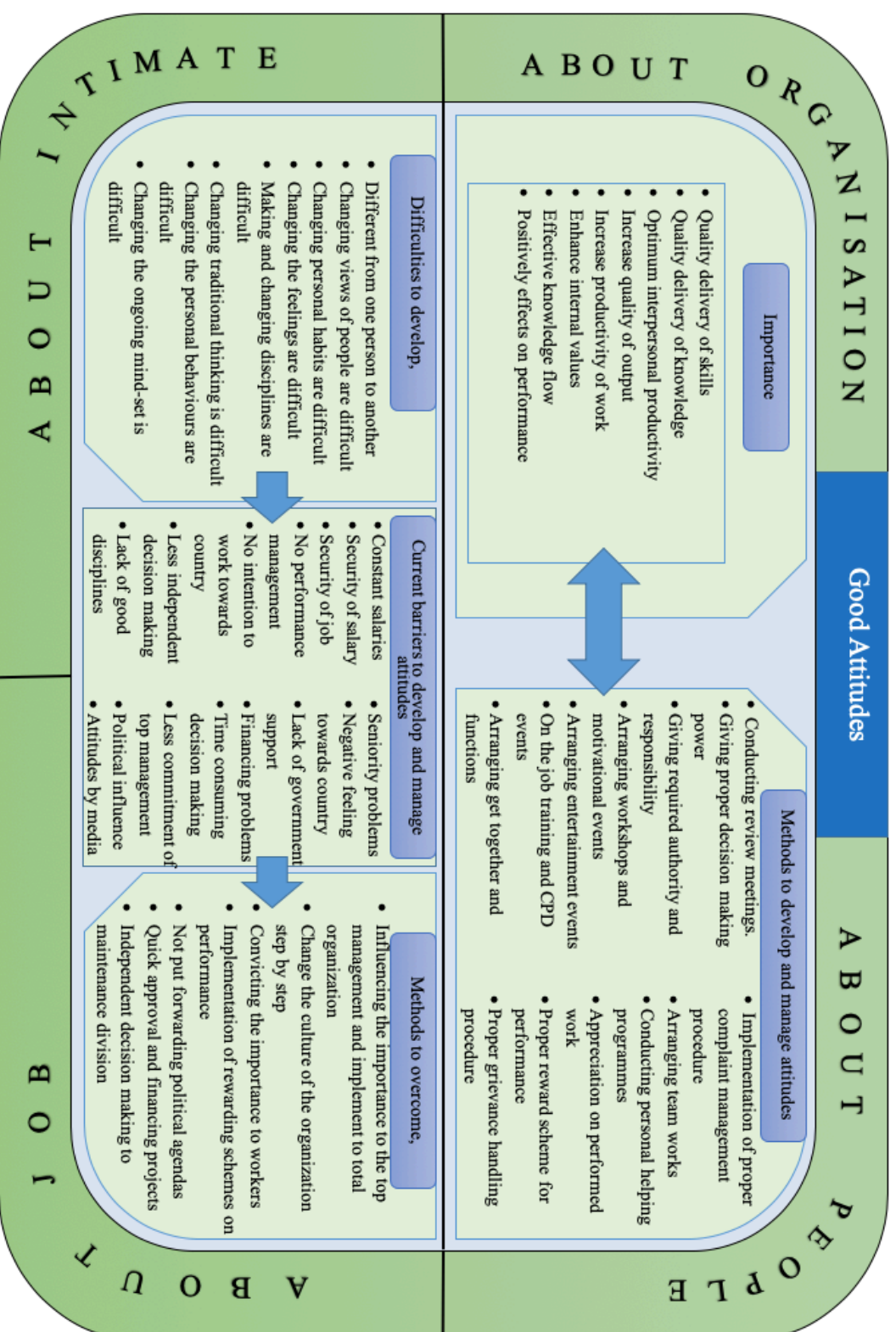


Figure 1: The framework to enhance productivity through human attitudes

All respondents asserted similar ideas on the importance of integrating good building services in each building and having a proper maintenance in order to have proper productivity out of the building. According to Velnampy (2008), currently there is no proper system or weight given to the field of attitude development and management in Sri Lanka even though it is essential to develop and manage attitudes of maintenance staff of public sector in Sri Lanka. All respondents delivered similar ideas that the attitude development of maintenance staff is a must in public sector and it should start from department level.

6. CONCLUSIONS

Building service's maintenance costs are rising day by day. The need for productive maintenance has become a vital fact in order to increase the quality of maintenance and reduce the related costs on maintenance. Proper attitude development and management within the workers of maintenance department will enhance the maintenance productivity directly. In Sri Lankan public sector organizations, there are many inefficiencies in maintenance departments and most of them are due to the improper delivery of maintenance works. Enhancement of proper attitude development and management within the maintenance departments will reduce the improper delivery of maintenance works and thorough attitude development, people will motivate towards the proper delivery of their intended job roles. According to the research finding, it was identified that, attitude of maintenance workers must be managed well in government sector organizations in order to achieve productive maintenance. As found out by the literature and confirmed by data analysis, attitude development of maintenance staff of Sri Lankan public sector organisation can be accurately done under developing strategies for basic categorisation of human attitudes. Final output was given by developing a framework and identifying importance, difficulties, current barriers and strategies to develop attitudes in maintenance department of public sector organisations in Sri Lanka.

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