EFFECTIVE COMMUNICATION SYSTEM BETWEEN BUILDING OCCUPANTS AND MAINTENANCE MANAGEMENT: A STUDY IN HIGH RISE OFFICE BUILDING, KLANG VALLEY, MALAYSIA

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Abstract: An effective communication in building management depends on the quality, safety and service of its system between maintenance management and building occupants particularly on the operation and maintenance activities. The crucial issue in building management is to develop communication system between maintenance management and building occupants in order to support value aspect in the building. Study on communication in the maintenance management has generally concentrated on the briefing process and the maintenance process. This research identified three attributes of the existing condition of communication system in maintenance management specifically safety practice, management quality and professionalism in operation and maintenance management. Eleven high rise office buildings in Klang Valley, Malaysia have been randomly selected for the study which involving two groups of respondents. In-house maintenance management personnel (MM) and outsourced contractors/consultants (OS) are in maintenance management group whereas building owners (BO) and tenants (T) as the building occupant group have been unstructured interviewed based on the value aspects of communication factors. The results had shown that unsafe practice, inadequate management and unprofessional maintenance management which effected from miscommunication among them in the whole level tasks. In addition, major issues of maintenance management tools: unavailable building policy, poor management of documents, also weak monitoring toward maintenance activities contributed to the insufficient communication system in maintenance management. The paper concludes that a systematic communication system between maintenance management group and building occupant group does not exist yet in high rise office buildings.

Keywords: Building Occupant; Communication; Maintenance Management

INTRODUCTION

The fundamental aspect in building management is to develop communication system between maintenance management teams and building occupants in order to support value aspect in the building. The communication system requires the participation between maintenance management teams who responsible for operation and maintenance activities (such as building maintenance work repair, building defects and upgrade facilities to meet the expectations) and building occupants who are as building stakeholders. An effective communication in building management depends on the quality, safety and service of its system between maintenance management and building occupants particularly on the operation and maintenance activities.

PROBLEM STATEMENT

The crucial issue in building management is to develop communication system between maintenance

management and building occupants in order to support value aspect in the building. Hua *et al* (2005) identified that ineffective communication system such as communication modes and communication distance between building occupants and maintenance management team are the crucial issues in high rise building. Clowes (2000) claimed that lack of information is a significant factor that contributes to miscommunication in operation and maintenance processes. According to Ali *et al.* (2002), a lack of knowledge sharing and poor communication between maintenance management teams and building occupants had caused main problems specifically on technical and documentation aspects. As Lee and Wordsworth (2000) noted, poor communication between maintenance management group and building occupants (for example, by failing to keep customers fully informed of progress) is one of the factors that affect working efficiency and is a reason for the relatively low productivity of the building maintenance. According to Langston and Lauge-Kristensen (2002), insufficient communication system in maintenance management is critical to cope with the considerable amount of knowledge needed to solve a multitude of complex problems and challenges.

AIM OF RESEARCH

Study on communication in the maintenance management has generally concentrated on the briefing process and the maintenance process. This research identified three attributes of the existing condition of communication system in maintenance management specifically safety practice, management quality and professionalism in operation and maintenance management.

The objectives of this research are: (a) to examine whether proactive communication results in effective communication between maintenance management teams and building occupants; and (b) to examine whether reactive communication results in ineffective communication between maintenance management teams and building occupants.

RESEARCH METHODOLOGY

Eleven high rise office buildings in Klang Valley, Malaysia have been randomly selected for the study which involving two groups of respondents. In-house maintenance management personnel (MM) and outsourced contractors/consultants (OS) are in maintenance management group whereas building owners (BO) and tenants (T) as the building occupant group. A minimum of five respondents from IH, five respondent OS of every building were unstructured interviewed. This study examines the above-mentioned objectives through the analysis of qualitative and quantitative data collected through face-to-face interviews based on the value aspects of building which are the quality, safety and service provided and implemented in that particular buildings.

This research also embarks on the following research questions (refer to Table 1).

RESULTS AND DISCUSSION

The results had shown that unsafe practice, inadequate management and unprofessional maintenance management which effected from miscommunication between maintenance management teams and building occupants in the whole task level. (refer to Table 2, Figure 1, Table 3 and Figure 2). In addition, major issues of maintenance management tools: unavailable building policy, poor management of documents, also weak monitoring toward maintenance management contributed to the insufficient communication system in the building. On the other hand, a clear communication system in maintenance management does not exist yet in high rise office buildings.

Another results of this study shown that there are other related current issues in communication system in maintenance management which affect to the building as a whole (refer to Table 4, Table 5 and Figure 3).

Most of the maintenance management teams preferred to use electronic mail for complaining form, immediate report and progress report but most of the building occupants preferred to communicate in face-to-face meetings or through telephone calls. In unquestioning relationships, communication may be through face-to-face meetings and telephone calls rather than electronic mail.

Most effective communication took place when the reactions from both parties were proactive. The factors that affected efficient communication were related to: maintenance management approach, mode of communication, technical knowledge, adequate information, nature of work, personality, resources, contact with building owner, occupants or end users and working experience. When the responses of both parties were not proactive, the factors that influenced efficient communication were related to: adequate information and technical knowledge. When only the responses from the maintenance management teams were proactive and the responses from building occupants were not proactive, the factors that affected efficient communication were related to: personality and resource.

Table 1: The formulation of the research questions

Research problems	Research questions
1. The ethical knowledge aspect interms of norm, policy and practicality provided in the building either they are reliable and well practiced or not in communication system.	1. Is the ethical knowledge aspect interms of norm, policy and practicality provided in the building reliable and well communicated?
2. The work quality of maintenance management teams interms of planned maintenance, unplanned maintenance, health and safety conducted in the building either they fullfil the standard of quality or not in communication system.	2. Are the building maintenance activities such as planned maintenance, unplanned maintenance, health and safety aspect conducted in the building fullfil the standard of quality in communication system?
3. Maintenance management teams' and building occupant group' satisfaction is influenced by the reliability and well practiced of ethical knowledge aspect and work quality in operation and maintenance activities that fullfil the standard of quality or not in communication system.	3. Is there any positive correlation between ethical knowledge aspect and quality, safety and service provided and implemented in operation and maintenance activities that fullfil the standard of quality in communication system?

Table 2: Perception of Maintenance Management Teams

Attributes of the existing condition in the building which affected by miscommunication in maintenance management	Agree	Neutral	Disagree
Safety: • unsafe practice	42	8	5
Quality: • inadequate management • weak monitoring toward maintenance management	40	10	5
Service: • Unprofessional maintenance management, • unavailable building policy • poor management of documents	45	8	2

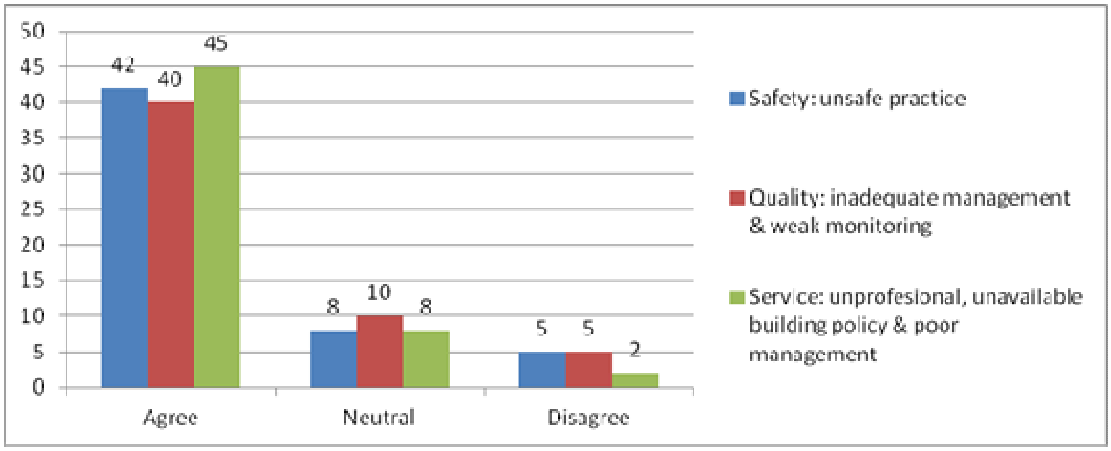


Figure 1: Perception of Maintenance Management Teams

Table 3: Perception of Building Occupants

Attributes of the existing condition in the building which affected by miscommunication in maintenance management	Agree	Neutral	Disagree
Safety: • unsafe practice	46	8	1
Quality: • inadequate management • weak monitoring toward maintenance management	42	8	5
Service: • Unprofessional maintenance management, • unavailable building policy • poor management of documents	45	8	2

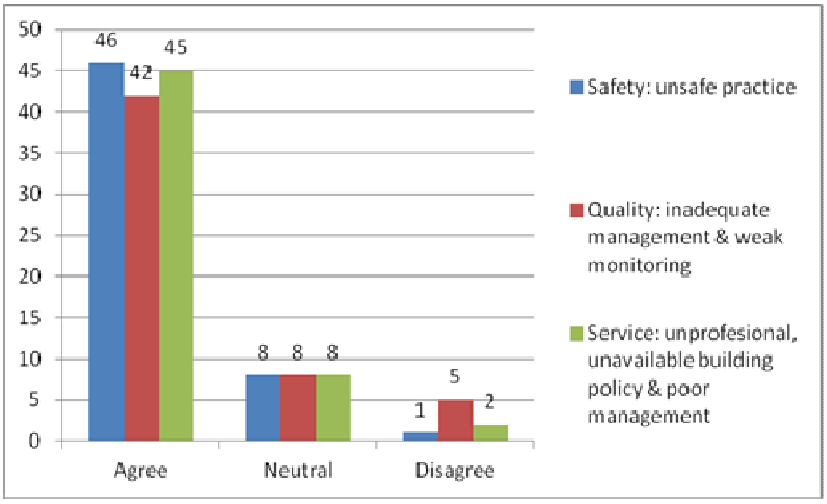


Figure 2: Perception of Building Occupants

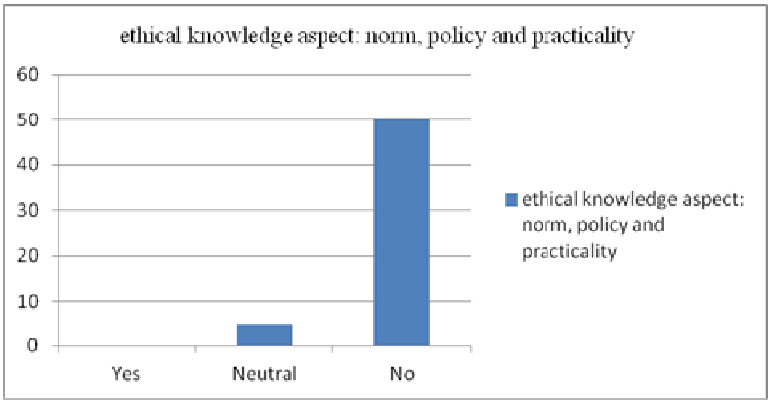
Table 4: Perception of Maintenance Management Teams

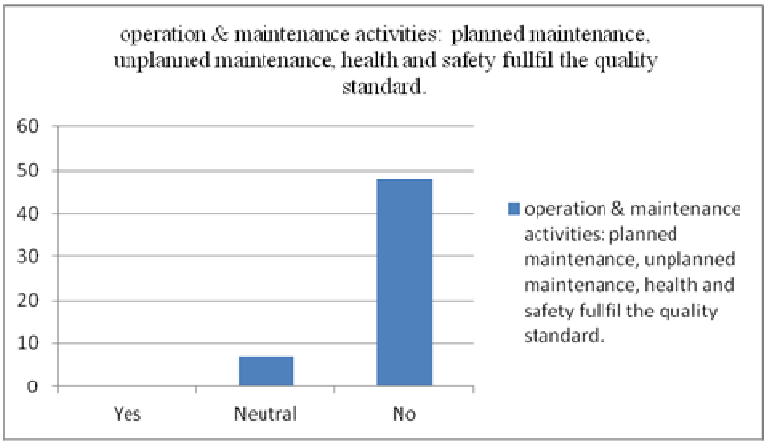
Other related current issues in communication system in maintenance management	Yes	Neutral	No
Is the ethical knowledge aspect interms of norm, policy and practicality provided in the building reliable and well communicated?	0	5	50
Are there any operation and maintenance activities such as planned maintenance, unplanned maintenance, health and safety aspect conducted in the building fullfil the standard of quality in communication system?	0	7	48
Is there any positive correlation between ethical knowledge aspect and quality, safety and service provided and implemented in operation and maintenance activities that fullfil the standard of quality in communication system?	50	5	0

Table 5: Perception of Building Occupants

Other related current issues in communication system of maintenance management	Yes	Neutral	No
Is the ethical knowledge aspect interms of norm, policy and practicality provided in the building reliable and well communicated?	0	5	50
Are there any operation and maintenance activities such as planned maintenance, unplanned maintenance, health and safety aspect conducted in the building fullfil the standard of quality in communication system?	0	7	48

Is there any positive correlation between good ethical knowledge aspect and good quality, safety and service provided and implemented in operation and maintenance activities that fullfil the standard of quality in communication system?	50	5	0





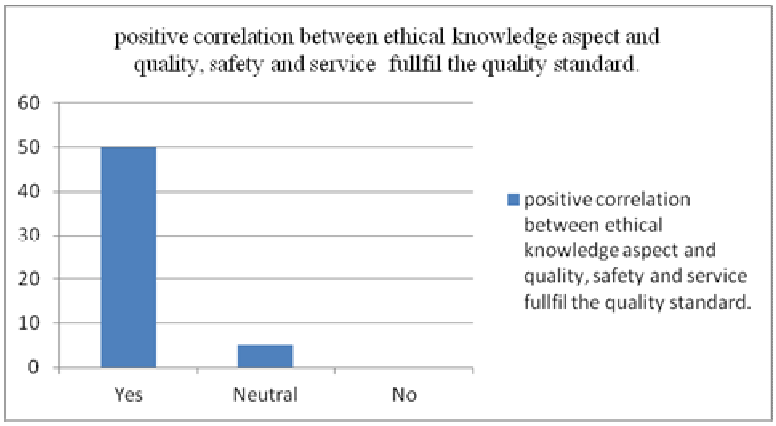


Figure 3: Perception of Maintenance Management Teams and Building Occupants

CONCLUDING REMARKS

Based on the patterns of both group of respondents' perception, the need for a good communication system in every aspect in maintenance management must be based on the concept of building's value in the effort to lead towards the effectiveness of maintenance management. It allows both groups to be proactively put at the center of management goal during decision making processes, enhance productivity, working relationships and takes into consideration both the objective and subjective requirements of building owner, occupants or end users.

According to the maintenance management teams' and building occupants' perception to the safety, quality and service aspects which are affected by miscommunication, the 'safety first' motto, implementing the benchmark of every task in order to fulfill quality standard, provides building policy as a guideline as well as procedure must be put into consideration in the whole operation and maintenance processes. Advance information and communication tools such as short messaging service (sms), electronic mail and web-based through the internet may have limited opportunities to influence receivers' responses for MM activities such as work requisition, repair or defect works, and upgrading works. Indeed, they may become a threat to receivers who are unable to respond immediately due to lack of resources (such as knowledge, time and manpower to complete work).

This study has recognized two categories for further research that are mainly related to operation and maintenance activities. These are: (a) Modes of communication; and (b) Communication distance between maintenance management teams and building occupants.

Modes of communication

Maintenance management should implement a communication media in order to assist in establishing the factors that influence the suitable option of communication channels. According to Trevino *et al.* (1990), communication media can be characterize as "rich" or "lean" based upon their capability to facilitate shared meaning. The media richness hierarchy ranks media in terms of their capability for processing unclear information.

Communication Distance between Maintenance Management Teams and Building Occupants.

The maintenance management team should observed that one of the causes of ineffective communication was the lack of direct communication between their team and stakeholders such as building owner, occupants or end users in order to rationalize and clarify the completion of maintenance work. Top management should identifying the reasons why communication gaps exist between the stakeholders and maintenance management team in order to help the decision making process especially on the viability of operation and maintenance activities.

The paper concludes that miscommunication between maintenance management teams and building occupants can affect the building performance especially to operation and maintenance processes in the buildings. On the other hand, a systematic communication system between maintenance management group and building stakeholders does not exist yet in high rise office buildings.

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