

Determinants of Knowledge Productivity among Administrative and Diplomatic Officers: An Exploratory Study

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ABSTRACT

The concept of productivity has become equally important as knowledge for the source of production. In today's economy, knowledge productivity has been recognized as the principal issues that are faced by the organizations in overseeing their knowledge workers. While exploring the concept of knowledge productivity, many researchers have developed knowledge productivity models and framework based on number of productivity factors such as human capital, social capital and etc. These factors were identified to tailor the needs of their context of study. Each researcher mostly focuses entirely on different standpoints while discussing the factors influencing the knowledge productivity. Hence, there are no common agreements on how influential are the factors discussed by the researchers against knowledge productivity. This paper reports an exploratory study to investigate whether the factors of knowledge productivity being discussed in the literatures study are applicable in the context of Malaysia study. A qualitative research was conducted to identify the vitality features that influence the knowledge productivity among the Malaysia's core knowledge workers known as the Administrative and Diplomatic Officer or PTD. Few PTDs in several government ministries in Putrajaya were purposively selected as the participants of this study according to certain prerequisites. The findings from the semi-structured interview data analysis indicates that most of the factors mentioned in the previous studies are relevant with the PTDs job environments. However, some other factors that are equally important in influencing the knowledge productivity among the PTDs were discovered. Other than providing more in-depth information on PTDs' nature of work, we conclude that the findings obtained from the field study are expected to help in refining the study conceptual framework.

KEYWORDS: productivity, knowledge worker, organizational factor, individual factor, Malaysia.

1. INTRODUCTION

Malaysian government has made initiatives move towards knowledge based economy as its prime target. Tun Dr. Mahathir Mohamad has stated "in our pursuit towards developing the K-economy, knowledge has to replace labour and capital as the key factors of production in our economy" [11]. He added that "the challenge for Malaysia is to develop this knowledge amongst our citizen so that our success will be due to the contributions of Malaysian talents and knowledge workers" [11]. With the transition to knowledge based economy, knowledge plays a governing role in leading the productivity and maintaining the economic performance growth. However, though Malaysia appears to be aggressive in its transition of using knowledge as major factor of production and commodity to be traded, it is difficult to measure or even estimate the role of knowledge in economic growth [11]. Most productivity measurements are estimate based on residuals. Other than this, the investments in research and development (R&D) or in formal education are also assumed as the inputs of knowledge productivity. Despite the emphasis on knowledge as the mean of production, the existence of studies in investigating the source of productivity and the factors influencing the knowledge productivity of a knowledge worker particularly the Administrative and Diplomatic Officer (PTD) in the context of Malaysia study is questionable. PTD as the main policy makers of the Malaysian government must act as the backbone of the knowledge economy initiatives. The work diversity of PTD needs to be in parallel with the government which is geared towards the transition of knowledge based economy. While there are few local studies focusing on knowledge economy [11, 19], studies focusing solely on PTDs' knowledge productivity are not found. Hence, not much known whether the PTD able to demonstrate a dynamic productivity and expertise towards the knowledge economy aspiration. Browsing through the literature on the concept of knowledge productivity, many researchers [7, 12, 26, 27] have developed knowledge productivity frameworks and models based on number of productivity factors such as human capital, social capital that vary in terms of its factors and complexity to accommodate with the context of study. Each researcher has different standpoints while discussing the factors influencing the knowledge productivity. It is visible that there are no common agreements on how influential are the factors discussed by the researchers against knowledge productivity. Moreover, as

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there is no existence of local studies addressing these factors, it is arguable whether the discussed factors are relevant in Malaysian context. Against this background, the purpose of this field study is to identify whether the factors of knowledge productivity discussed in the literatures study are applicable with the Malaysian context of present study; particularly among the PTDs in several government ministries in Putrajaya.

2. REVIEW OF LITERATURE

The aim of the study is to determine whether the factors that influence the knowledge productivity as discussed by several researchers are applicable in Malaysia context. Given the intricate nature the study, the literature review has three parts. The first part discusses on knowledge productivity definitions. The second part discusses on selected previous studies on knowledge productivity and the last parts discusses on the factors that influence knowledge productivity.

2.1. Knowledge productivity

The foremost priceless asset in the 21st century organization will be the knowledge workers and the knowledge workers' productivity [8]. As the source of production is knowledge, there is a significant need for an organization to increase the productivity of their knowledge workers in shunning a stagnant in the economic growth. Referring knowledge productivity as knowledge-based production process, Stam defines knowledge productivity as a process where knowledge is transmutes into value [27]. He also adds that knowledge productivity is an intangible process as the main source or input in the process is knowledge while the end product is intellectual capital which is also an intangible asset. Drucker describes knowledge productivity as an organizational ability [8, 9, 10]. Huang and Wu interpret knowledge productivity as "the capability with which individuals, teams, and units across an organization achieve knowledge-based improvements, exploitation, and innovations" [12]. Meanwhile, Amir, Ramezan and Omrani define knowledge productivity from two perspectives [3]. Based on the literature study that highlights intellectual capital as the main factor in knowledge productivity; Amir, Ramezan and Omrani define the knowledge productivity as "the learning ability in order to create knowledge-based results" [3]. In addition, they also interpret knowledge productivity as "to create innovation in organizations which is the result of intellectual capital actions." Based on the researchers understanding gained from the literatures review and considering the context of this study, knowledge productivity is defines as documented knowledge-based output. This definition reflects that the main output or the knowledge-based results of a PTD job scope that will be considered in this study need to be in documented form such as documented policies, case study reports, speeches, seminars' manuals and etc.

2.2. Previous studies on knowledge productivity

Knowledge based economy (k-economy) is being stressed as a crucial strategy for a country to compete among other nations in globalised era. According to Savage, the socio-economic development has been transform according to three stages; starting from the agriculture age where ownership of land reflects the wealth; to ownership of capital in the industrial age [24]. The current stage is the knowledge age where the ownership on knowledge reflects the wealth of an organization. Drucker stated "knowledge is productive only if it is applied to make a difference" [10]. Knowledge productivity is a tricky dealing as the mean of production (i.e. knowledge) for knowledge productivity and also the tool of production (i.e. brain) is possess by knowledge worker. Thus, there is a need for organization to eventually enhance their knowledge workers' productivity in make use the knowledge to transform it into a knowledge based result (e.g. innovation). Based on this ground, Sobia and Bakhtiar conducted a study exploring the knowledge workers expectation from their organization and found that the level of knowledge workers satisfaction influences the level of productivity of the knowledge workers [26].

Drucker describe the present situation as post-capitalist society where the focus will be solely on the knowledge worker and their productivity of knowledge work [10]. Moreover, Drucker stated six major factors in helping organization to improve the knowledge productivity which are 1) task; 2) autonomy; 3) continuing innovation; 4) continues learning; 5) quality and lastly 6) worker asset [8]. Ramezan depicts the similarity between the knowledge productivity with knowledge management concept [22]. Both are well known concept in knowledge-based view of an organization. The obvious difference is that, rather than claiming that knowledge itself can be a competitive advantage, knowledge productivity stand in making the knowledge to be productive as its competitive advantage. Ramezan also mentioned that as the mean of production for knowledge industry is different from traditional production, there is an urgent need to identify the main drivers of knowledge productivity [22].

Amir, Ramezan and Omrani conducted a study in exploring the importance of learning and intellectual capital which results to incremental and radical innovation in organization perspectives [3]. They also discovered that knowledge creation and innovation relates to each other. Thus, they concluded that, factors that influence the aspect of knowledge creation and innovation need to be considered when measuring the knowledge productivity. Stam introduced the Knowledge Productivity Enhancer or KP enhancer [27]. This

method is presumed as a practical ways in diagnosing the knowledge productivity in an organization and also to construct a plan in improving the performance growth. KP enhancer mainly explores the quality of the knowledge creation process and measure the radical and incremental innovation. Antikainen and Lönnqvist introduced Knowledge Work Productivity Assessment (KWPA) as a method in measuring productivity in knowledge based organization [4]. KWPA is developed based on subjective productivity measurement (SPM) approach where subjective data is collected from a target group.

2.3. Previous studies on factors influencing the knowledge productivity

Based on the literature studies, it is found that there is a lack of information regarding knowledge productivity in Malaysia. However, there are few studies that discuss on the knowledge productivity in the context of other countries and thus, can be adapted for this study. Study by Antikainen and Lönnqvist believe that the drivers of productivity are equally the same drivers that have an effect on performance [4]. They list out the drivers of knowledge work productivity into three groups of factors which are input, output and process. Inputs are divided into organizational and personal inputs. Organizational inputs include factors such as human capital of employees, information system and etc. While personal factors include factors that most likely influence the employees such as motivation and job satisfaction. Process includes factors such as team work, organization of work, division on tasks and etc while output contains the measuring factors of work output of knowledge workers including innovation and quality.

Sobia and Bakhtiar also justified that factors such as organizational culture, reward and incentives and technology can increase the productivity of the knowledge workers [26]. These factors could also act as a knowledge workers' retention strategy. Although Sobia and Bakhtiar had proven that the above mentioned factors highly influence the knowledge worker productivity, they had limited their study to organizational factors without generalizing to other factors such as the workers own personal factor that may affect their productivity [26]. Meanwhile, Tongo also discovered that incentives also a factor that influence the productivity level of public servants [28]. He categorized incentive into two types which are financial incentives such as salary and non-financial incentives such as praise and etc. Tongo also found that non-financial incentives is equally important as financial incentives in boosting the public servants productivity level [28]. Thus, he recommended that in retaining the workers, organization need to provide their employees with best possible level of incentives.

Researchers argued that that knowledge worker productivity is impossible to be measured using the traditional or common measurement [4,7]. Amir, Ramezan and Omrani study focus on the aspect of intellectual capital as the core variable on knowledge productivity [4]. They identified three main aspects of intellectual capital which are: human capital, organizational capital and social capital. Basically the three aspects of intellectual capital describe the use of knowledge in three different circumstances. Human capital consists of factors pertaining to people such as knowledge skills and working cultures. Organizational capital refers to embedded knowledge and experience in an organization including organizational structure, organizational culture and trademarks. While social capital refers to knowledge embedded in interaction and also mutual networks [21]. This includes in knowledge sharing, working teams, working teams and etc.

Within the academic environment, there are several studies on improving the productivity of research and publication and also the faculty vitality [5, 6, 23, 32]. Zainab for instance, has identifies the factors and the issues in initiating a productive academic research environment [32]. The dependent variable for this study is the total number and type of research publication published by the respondents including book, refereed articles, research report and patent. Meanwhile, independent variables are individual, organizational, departmental and collaboration factors. Likewise, the study by Bland et al. also found that, factors that contribute to a productive academic organization includes individual, institutional and leadership features. From researchers point of view, even though Zainab and Bland et al. studies were conducted in different country and context; both studies have identified resembling factors that affect the research productivity.

Conclusively, based on the literature review, two notable themes have been noted, which are personal factors and organizational factors. Personal factors are features that derive within an individual whereas the organizational factors arrive from outside of an individual particularly from the individual environment that may influence the knowledge productivity. These factors are assumed to be the influencing factors to the knowledge productivity of the knowledge worker. Hence, in order to test our assumptions, the following research question was formulated to guide the conduct of the study:

RQ: How the PTD interprets the personal and organizational factors that influence their knowledge productivity?

3. METHODOLOGY

Considering the exploratory nature of the research question, this study adopted a qualitative research strategy, using semi-structured interview to obtain the primary data. Particularly, the purpose of the interviews is to identify the vitality features (personal factors and organizational factors) that influence the knowledge productivity among the PTD.

3.1. Instrument development

A semi-structured interviewing data collection instrument was adapted from Antikainen and Lönnqvist study to conduct personal individual interviews [4]. Firstly, the researchers had conducted pilot-test interviews in one selected government agency to ensure that the instrument is well structured and understandable by the interviewee. After completing two interview sessions during the pilot-test, the researchers had identified several weaknesses which are 1) some of the questions were complicated for the interviewee to understand. As a result, the interviewer had to explain in brief each question to the interviewee 2) Because of the time constraint for each session, interviewer had to ignore some of the probing questions and focused on the main questions only. Upon identifying these weaknesses, the researchers had revised the instruments according to the lesson learned from the pilot-test interview sessions with the subject matter experts in the academic field. Some questions reflecting context of this study were also added. Summary of the instrument main questions are shown in Table 1.

Table 1: Data collection instrument

Concept	Interview question	Reference
User context	<ul style="list-style-type: none"> ▪ How long have you been working in this organization? ▪ What is your current position? ▪ What is your current grade scheme? 	Added by researchers
Present/Prior experience	<ul style="list-style-type: none"> ▪ Which eight field of specializations where you involved since your engagement in the public service as a PTD? ▪ How long have you worked in each specialization? 	Added by researchers
Job scope	<ul style="list-style-type: none"> ▪ Can you briefly explain on your job scope in this organization? ▪ What are the main outputs of your work? 	Adapted from Antikainen and Lönnqvist (2005)
Vitality features [Personal and organizational factors]	<ul style="list-style-type: none"> ▪ In your opinion, what are the factors that affect the process of doing your work? ▪ What are some of the factors that hinder your productivity? ▪ What are some of the factors that benefit your work? 	Adapted from Antikainen and Lönnqvist (2005)

3.2. Population and sampling

Several PTDs from two government ministries were purposively selected to be interviewed based on two conditions. First, the PTDs must have been working in the government sectors for at least 5 years. Second, PTDs must have served in several ministries or any other government agencies. The purpose of these two conditions was to ensure that the interviewees are competent and experienced enough to provide accurate answers that will be asked during the interviews.

3.3. Data collection procedures

In order to conduct the interviews, the researchers contacted the representatives from each ministry by telephone or email to seek their consent. As illustrated in Table 2, a total of six interviews were conducted at the interviewee's work place. Each session started with a brief explanation on the nature of the study and lasted approximately for forty five minutes. In order to gain the trust from the interviewees, the researchers prepared the interview consent form for the interviewee to sign as an agreement to participate in the study and also to allow the researchers to audio-record the interview sessions. The researchers also had explained that the recorded materials are considered as confidential and are accessible within authorized individual only.

Table 2: Respondents' Profile

Respondents	Current Position	Grade scheme	Length of service as PTD (years)
R1	Senior Assistant Secretary	M44	5
R2	Assistant Secretary	M41	9
R3	Director	M48	8
R4	Chief Assistant Director	M48	8
R5	Chief Assistant Director	M48	7
R6	Chief Assistant Director	M48	8

3.4. DATA ANALYSIS STRATEGIES

The recorded materials were then transcribed to ascertain the authenticity of data analysis. The transcripts were analyzed following the convention of template analysis where the researchers generate codes or template representing the identified themes derived from the literature review [17]. As mentioned before, the researchers had identified *Personal Factors* and *Organizational Factors* as themes in this study. The researchers coded the transcripts into two broad themes as the initial template. Repeated analyzing of the transcripts had helped the researchers to form more layers of specific categories for each theme. Qualitative data analysis package ATLAS.ti was also used to analyse the data. Addressing the analytical validation, the transcription were coded by the researchers and validated based on shared interpretations of the transcript data. Subsequently, the researchers' interpretations were then reviewed and validated by the subject matter experts in the academic field.

4. Findings

The findings from the analysis are organized into two broad themes namely *Personal Factors* and *Organizational Factors*. These two themes which address the research question of this study represent the vitality features that influence the PTDs' knowledge productivity. Throughout the discussions, the researchers refer the interviewees in this study as 'respondent' or (Rn). Texts written in italics and surrounded by double quotation marks indicate the words of the respondents.

4.1. Personal factors

Work motivation: The respondents had displayed the ethics that represent them as government workers; much to researchers' astonishment. As described by R1, the work motivation in the government sectors is oriented towards the sense of duty.

"Like in the state government, my interest is actually to help the people." [R1]

Though R3 share a similar belief as R1, R3 admitted not having the motivation to work at the present organization compare to previous engagement in other government agency. R3's motivation is influenced by the job design that the respondent excites the most. However, in this case, spiritual principle has act as the motivational force that direct the respondent to perform meaningful efforts.

"...responsibility to the citizens, taxpayers and services; I have no motivation in performing the tasks but I'm committed because working is also sort of religious worships..." [R3]

Positive attitudes could lead to motivational encouragement for the respondent to attend to work daily. As an avid reader of self development books, R6 revealed that;

"My motto is "life is beautiful. If it's not beautiful at all. It is not that bad." The desire to go to work, if we have positive and rational thought, we will go to work and feel thrilled for the commitment and positive attitude that we already embraced."[R6]

Work distance: Long distance commuting to work could lead to stress especially if the employee need to face a heavy traffic on the way to work. Three respondents admitted that having their home located near to workplace will avoid them from feeling tired and strain in performing their tasks. They also believed that these negative effects will decrease their work performance.

"From home, I'll travel about 20 minutes, which is also one of the factors." [R1]

"Near to home is also a factor...a little bit tired to travel back and forth... it is an influencing factor." [R2]

"I used to stay in Putrajaya, now I'm staying in Bangi, not that far. It's also a factor why I'm comfortable working here." [R4]

Personal network: Personal network usually is form by informal communication encountered in the workplace. This practice is encouraged by organization as it will motivate work collaboration, sharing of ideas and nurture the organizational culture. R1 described that personal network between friends, colleagues and also the immediate management stimulate the working environment. Sharing a similar opinion as R1, R2 added that the relationships between the members in the personal network need to be maintained to avoid any confrontations.

"Another thing is if we are not in good term with our subordinates, it is an issue also. To understand the culture (organization), your friends and also the subordinates will help..." [R1]

Personal network extended the benefits of peer group where mutual friendship is build based on common interests and working together will be more encouraging and pleasant. R6 described an example on how personal network creates positive sense in attending to work;

"Personally, "feel good to work" factor; I feel that friends plays important role in this organization including the bosses that can be our friend. This is also factor that makes us feel ok, more enthusiasm to work. Our subordinates also play an important role actually."

Work-life balance: Two respondents mentioned work-life balance as influencing factor. Work-life balance is a concept of balancing act or prioritization between works (career) and life (family, social, health, etc). It is tricky trying to have an equal balance amount of time spend between the various tasks and personal needs.

“One of it is to balance between career and life; need to balance the time spend on works and family and also the kids.” [R1]

Both respondents clarified that the need of work-life balance varies over time. For instance, the balance required when respondents are single and after married life or before and after having children. The respondents also mentioned the importance of having a good boss that understands their personal needs and family concerns. R4 described that as an entry level employee in organization with traditional notion of working 8am to 5pm, respondent frequently work late or bring work back to home which resulted in less time spend with the family. However, this situation changes after R4 was being promoted into higher position.

“So far there are no problems with the family; in the early stages, I have to bring work back to home, now only if it is urgent. Concerning work life balance, I think its balance.”[R4]

Academic background: There are mix opinions when the respondents described on academic (education) background as influential factors of knowledge productivity. R1, R2 and R3 described that academic background its important in term of work promotion, grade scheme and salary level. Having knowledge of law background, R1 relates that academic knowledge had helped the respondent while working in previous government agency as the tasks were involves more on enforcements. Moreover, it also provides confidents to R1 in preparing work related reports.

“Education, I think education is important, things related to the law for instance, sometimes make me confident to write the report.”[R1]

Meanwhile, R5 and R6 responded negatively, stating that academic background does not have any effect on their working productivity. As a PTD, there is no assurance that the respondents will be placed in a position based on their academic background.

“Education background is secondary unless if we work with what we had learn previously which could help the unit. So, educational background does not influence much.” [R6]

Job satisfaction: Job satisfaction has link with respondents’ motivation as well as to productivity. Generally, it describes how content are the respondents with their job scope as PTD. Respondents; R1, R2, R3 and R4 mentioned that job satisfaction depends on how content they are with their work. This also influences their productivity and work enthusiasm level. However, two types of satisfactions were clarified by the respondents. R1 described endogenous satisfaction caused by stakeholders’ and self satisfactions which lead to high job satisfaction and dedication towards tasks.

“When we can provide what the stakeholders want, I feel satisfied.” [R1]

Meanwhile, R2, R3 and R4 described exogenous satisfactions brought by income, recognition and promotion. It was significance that these respondents highly acknowledge their external satisfactions as determinant towards their job satisfactions.

“If I do something for example if I generate paperwork and later presented the paper and the boss is happy with it, I have high job satisfaction...” [R2]

“Reward is also one of the factors. After a few comments, when our paper is accepted and recognized by the supervisor and the manager, it is a satisfaction.” [R4]

Skill variety: R2 and R5 had emphasized on equipping self with multiple skills as a PTD. R5 described that it is more important for the PTD to master the management skill as it is a useful skill that can be practiced in various work specializations. However, R2 specified more on multiple skills requirement. As the PTD has the tendency to be rotated in different field of specializations throughout their service, R2 believed the multiple skills will facilitate the PTD to survive at any level;

“Communication, we have to have communication skill... we as civil servants, as a PTD, if we have knowledge in terms of service, management and administration, we can go far.”[R2]

Subject matter expertise: Subject matter expertise or job knowledge represents competence of the respondents in their content areas. Indirectly linked to academic background, subject matter expertise principally obtained from experiences gained throughout length of services. R4, R5 and R6 described subject matter expertise as fundamental characteristic of a PTD. It will boost the confidence of the respondents in performing their daily

tasks. If in a situation of being promoted or transferred to other government sectors, the PTD will first need to learn and grasp with the job knowledge. R5 revealed that;

“Generally, I have no problems to learn new area. However, work related subject matter is critical for me...means...my knowledge on the job.”[R5]

Ability to learn and understand: While describing the ability to learn and understand, the respondents refer to condition of learning new subject matter expertise in a new working environment. According to the R4 and R6, learning is essential as it will help the PTD to understand the job knowledge and to require new set of skills.

“If we go to a new place, what we got to do; we got to learn, either we ask the top persons or the subordinates. I think that's my survival guide.” [R4]

Apart from referring to documents, R6 also described that one can also learn from subordinates, colleagues or immediate bosses. Negligence in the ability to learn and understanding will jeopardize the work performance and productivity.

“Study whatever necessary we need to do in the new place based on the information such as files, ledgers and if it involve on studies, we study what had been done in the place. The most important is to refer to officers, subordinates, our bosses and try until we get and until it can be done...” [R6]

Affairs in personal life: Affairs in personal life were described as negative personal issues that affect the respondents’ concentrations in performing their tasks. R4, R5 and R6 clarified that personal negative issues will cause the respondents to have bad moods and strains. This will eventually affect the productivity of that particular day. The respondents added that these situations are common and unavoidable. Summary of the findings are presented in Table 3.

“Issues on family will also affect... influence our mood to carry out our work.” [R5]

“Small problems such as affairs in personal life; going home late from work, forget to run some errands also affect the mood to work.” [R6]

“In terms of stress, everyone have stress on their own issues. But here, issues are dissolved through discussions.” [R4]

Table 3: Findings on personal factors

Context	Number of positive responses (n=6)	Number of negative responses (n=6)
Work motivation	3	1
Work distance	3	-
Personal network	3	-
Work-life balance	2	-
Academic background	3	2
Job satisfaction	3	1
Skill variety	2	-
Subject matter expertise	3	-
Ability to learn and understand	2	-
Affairs in personal life	3	-

4.2. Organizational factors

Organisational standards, practices and routines: While describing the organisational standards, practices and routines, the respondents mentioned it as in the perspective of organizational culture and routines. Organizational culture in the organization reflects the organization personality. R1 described that celebrating employees’ birthdays or retirements are example indicating organizational culture in the respondent’s organization. R1 added that these functions aid the socialization of the respondent and other co-workers and could foster collaborations among them. However, it is also the bosses’ role in defining the culture in the respondent’s organization. Meanwhile, R2 described the work routines and format of the organization. Changes in job design and work format decreases the respondent’s productivity as much time needed for R2 to adapt to new changes.

“Sometimes when we change to other software, it interferes with our work ... or when the work formats are different, the learning process will be slow and this interferes with our work.” [R2]

Incentives: Incentives encompass the rewards and recognitions received by the respondents. Rewards and recognitions have been clarified as key factors in boosting the respondents’ productivity, self motivation and

loyalty level. Compare to monetary rewards that can motivate the respondents for a short-time period, non-monetary rewards such as job security, flexible working hours and opportunities for training are recognised as stand out point for long term outcome in encouraging the respondents' performances.

"Reward such as bonus from the government is something we wait for. Second, the reward must be such as praise from the boss as it gives motivation to improve the performance of our work. If we're in a good term with the boss, our review would be good as well." [R2]

The respondents; R1, R2, R3 and R5 described that recognitions from their employers make them feel valued and appreciated for their contribution toward the organization goals. Appreciation also tends to make the respondents happier and thus create deeper respects to their employers.

"Important that if we work and people doesn't recognize the work, deep inside we will be a bit upset. At least, we are recognised by the boss, means when we do our work, the boss comment..." [R1]

Incentives embark sense of passion and enthusiasm among the respondents; thus it has helped in creating a more productive working environment where the respondents are willing to contribute more efforts to their performances. However, R5 described that even though rewards are welcomed, the respondent need to work harder in gaining the recognitions from the employer and subordinates as R5 was recently been transferred to that particular organization. R5 highlighted;

"If somebody rewards us, we will feel happy. But for me still, as long as we can perform our work, achieve what we expect, it's enough. I still need to learn more in order to obtain the expectation of the boss or subordinated, because of this I don't think much on the reward and recognition." [R5]

Working environment: Working environment represent not only the physical conditions and facilities in the organization (lighting, air-conditioning, etc) but also the psychological climates including the colleagues mindset and behaviours, organizational core values and common language. R2 and R4 described that encouraging working environment and team-player motivation among colleagues and subordinates also contributes to respondents' productivity.

"Friends and work environment, it all affects our work. Environment is very influencing."[R2]

"I've been here for a long term, the working environment is more conducive here and I have the knowledge, meaning on the nature of our work dealing with agencies..." [R4]

Vital network-professional communication: Vital network-professional communication involves multi-channel flows of interactions between the respondents and other members in the organizations. It is an important process of smooth running business operations. R2, R4, R5 and R6 described this form of communication as the professional working communication being carried out between the respondents and subordinates, colleagues, immediate bosses or between team members. R5 described a situation related to network-professional communication;

"First for me, the environment around me is important, means the office environment including the interaction with the boss, direct immediate boss, it will also affect if there are no feel of excitement... and the people around us...meaning ours boss, subordinates, it will affect because we can't work alone."[R5]

According to R4, professional communication is a daily occurrence where compare to personal network, professional communication is more on having a group of productive people or team members in accomplishing work-related tasks. Other than sharing collective ideas, it encourages trust and working cooperatively. R4 added that;

"If all the information is available; my officers [subordinates] are also dependable when it's come to find information. I can depend with my officers in preparing initial drafts...meaning that... I can depend on the teamwork in my unit; so far the teamwork is okay, we always talk. We cannot feel shy to ask; we must learn and ask the seniors."[R4]

However, as any other form of communications, network-professional communication may also experience misunderstanding or any other communication problems that can lead to conflicting work style or ideas between the members in the network-professional communication. Management styles and also academic background could also cause office misunderstandings. Thus, the respondents described that these issues need to be solved immediately or it might affect the work productivity and delays in completing related tasks. R6 admitted;

“Troublesome when we do not meet the expectation towards the work that we do; also when subordinates are not in line with us. These are factors that can affect my work.”[R6]

Technology: Technology is a tool that could facilitate the respondents in accomplishing their task. Though there are many forms of technology; R2, R3 and R4 described the use of personal computer, telephone (e-mail and messaging) and Internet as a medium of communication and tools for performing their daily tasks. R3 admitted infrequent use of the internet except for checking the emails daily. R2 described that;

“Technology, of course it will be a problem without the computer, telephone.”

Emphasize priority goals: Work prioritizing is an important productivity strategy. It signifies in completing the tasks that are regarded as most important. Respondent described that prioritizing on task that needs to be done in most efficient order helps in aiming daily goals. However, R4 highlighted a concern;

“Our job involves in doing the paper works. We need to concentrate while conducting a research, however sometimes we are told to deal with other issues. This will delay our ongoing task.” [R4]

Leadership style: Leadership style concerns on the approach taken in providing guidance, embarking plans, and motivating others in achieving the organizational goals. The respondents explained that a leader or the bosses could command them for a particular task but in the same time, support them and others in accomplishing the task. Other than this, the bosses need to be sensitive on the respondents' wellbeing in the workplace and also their personal needs.

“Another one is supervisor, supervisory. Like us in this department, bosses tend to be very helpful, either on work or personal related issues.” [R4]

R6 mentioned that positive leader that valued the respondent and other colleagues' achievements will increase the level of productivity. R6 highlighted that a good leader with effective leadership style could cultivate collaboration and enhance the motivation level of the workers. R6 added that;

“Our superior...means...the bosses act as our idol that can revive our spirit based on their leadership. Not necessarily bosses at our place, including any other around us or at other unit, boss who behave as “feel good” will be source of inspiration for us to come to work.”[R6]

Information sharing: While describing the sharing of information, the respondents highlighted on the conveniences in acquiring the information needed in performing their daily tasks. Information is needed to supply in the respondents' work process. Any clogging in the flows of obtaining the information or being supplied by incomplete information will jeopardize the work that need to be conducted. R4 and R5 described that they did not confront any difficulty in obtaining any information needed as their organization has effective information sharing practices. Moreover, the respondents also could approach their subordinates, colleagues or even the immediate bosses to acquire work related information.

“We can talk directly with our senior deputy or the director, there is no barrier...means throughout my posting here, I can talk directly to get any information.” [R4]

“Overall, there are no problems for me to acquire any information. The main thing is communication with immediate boss and immediate subordinates as we want to carry out our work.” [R5]

Career development: Career development concerns on the prospect changes that the respondents would like to acquire to make improvements in the respondents' career path. This includes in acquiring of shifting to new career, recognition, educational qualification or certifications. The respondents revealed that the main reason they choose to be a PTD is because it offers wide ranging opportunities in career growth. As a PTD, R5 and R6 are entitled to be involved in the eight fields of specializations where they could be promoted or transferred to any other government sectors.

“Depends on the individual, the reason I enter PTD is because the work opportunity is widespread; I want the opportunity to work at few other places [agencies] before retirement.” [R5]

The respondents describe that the opportunity in career development contributes to their work productivity as it keeps them focus on their career track and contribute more efforts in realizing the organization's aspirations. Summary of the findings are presented in Table 4.

Table 4: Findings on organizational factors

Context	Number of positive responses (n=6)	Number of negative responses (n=6)
Organisational standards, practices and routines	2	1
Incentives	4	2
Working environment	2	-
Vital network-professional communication	5	-
Technology	3	-
Emphasize priority goals	1	-
Leadership style	2	-
Information sharing	2	-
Career development	2	-

5. DISCUSSION AND CONCLUSION

Personal Factors: The findings depict that most of the factors being discussed in the literature study are being repeatedly mentioned by the respondents. Ten factors were identified from the field study. However, some of the respondents described the factors based on their own perspectives compare to the discussion in literature study. When describing on motivation, the respondents displayed the motivation towards public service and sense of duty and commitments toward the organization. Three out of total six respondents claimed that personal networks influenced their knowledge productivity. As mentioned by Antikainen and Lönnqvist [4], the respondents explained that personal network tends to be conducted in informal communication between the members in the organization. While reflecting on job satisfaction, the respondents were more content on external satisfaction brought by their incomes and recognitions as described by Stähle et al [25]. In addition, they also highlighted the importance of a PTD to master multiple skills including management and administration skills as a survival guide for a PTD. Other than acquiring variety of skills, the respondents also revealed that acquiring subject matter expertise or job knowledge is required in order for the PTD to stimulate productivity. Similar statements had also been mentioned and discussed by researchers i.e. competency directly linked to productivity and emphasized that learning and working needs to be parallel so as to promote innovation in the workplace. Continuous learning is also one of the six major factors that determine knowledge worker productivity as claimed by Drucker [8]. The findings from the field study also support this claimed. The respondents described that learning in the workplace will help a PTD to master the job knowledge and to manage their work performance and productivity. Lastly, several respondents revealed that negative affairs in their personal life could influence their knowledge productivity. Issues such as stress and working late may decrease the motivation to perform their daily tasks.

The researchers also discovered several factors that were not discussed in the literature study. This includes work distance, work-life balance and academic records. When describing on the work distance or work-trip distance, the respondents claimed that having their home located near to the workplace ease them from stress and worn-out caused by long-distance commuting to the workplace. Hence, their work productivity could be maintained. Meanwhile, the respondents also highlighted that work-life balance in spending quality time with their family and also dedication towards their work is tricky business to be managed. However, having an immediate boss that understands the personal need of the respondents could ease the pressure on juggling work-life balance. Lastly, one of the factors that received mixed reactions from the respondents is academic background. Few respondents claimed that academic or education background definitely influences their knowledge productivity. These respondents also explained that PTD with higher level of education could obtain better grade scheme, salary level and the opportunity to get promoted. In contrast, several other respondents opined that level of education does not affect their working productivity. They further stressed that as a PTD, there is no assurance that one will be placed in a position based on their academic background. In conclusion, seven out of ten factors identified in the literature study are relevant in the context of PTD in Malaysia. Based on the findings, the researchers become more motivated to further understand on how significance are the work distance, work-life balance and academic records in influencing the knowledge productivity.

Organizational Factors: The finding has identified nine factors that influence the knowledge productivity among the PTD. Organizational standards practice and routines reflect the values, beliefs and culture of an organization; it need to be included when assessing the productivity. The respondent described that organizational standards practice and routines as a blending between organizational structure and organizational culture. According to them, the routines and the culture in their organization could foster collaboration and supporting each other performance. They also added that incentives also play a major part in influencing their knowledge productivity. In addition, they also highlighted that, recognition from their immediate boss make them feel appreciated and valued.

Working environment encompasses the physical facilities and the psychological climates of a workplace. This factor could encourage an innovative environment in the organization. The respondents clarified that an encouraging work environment with supportive subordinates and colleagues could contribute to the productivity level. Bland et.al describes that network-professional communication as having connections with productive colleagues [6]. The respondents expressed that professional working communication is being carried out frequently while performing work related task or teamwork. The respondents also added that some of the benefits gained through network professional communication encourage trust and collaborative efforts. Several respondents also indicated that technologies such as telephone, email and internet ease their tasks and performance.

While describing on leadership style, two respondents agreed that a good leader would motivate and support the respondents and colleagues in achieving the organizations' goals. Leader that valued and respect the respondents' contributions and achievements will indirectly increase the quality of the knowledge productivity. This feature is stated as one of the leadership features that could contribute towards productive academic organization is facilitating productivity [6]. Antikainen and Lönnqvist clarified that sharing of information is an important part of work process as delays in obtaining information could jeopardize knowledge workers' productivity [4]. Two respondents expressed similar statements and also added that they could obtain information through their subordinates, colleagues or immediate bosses. Finally, career development is also being highlighted by the respondents as vital factor that persuade them to choose PTD as their profession and thus, influence their work productivity. Career development as being mentioned by Bland et.al [6] as institutional characteristics that leads to a organizational productivity. In conclusion, all nine factors that had been described by the PTDs are comparable with those factors being discussed in the literature.

From this study, we conclude that most of the factors that related to knowledge productivity as discussed in the literature study were applicable in the Malaysia context of study. However, due to time constraint and the busy schedule of the respondents that participated in this study, the researchers were given limited time for each interview session. Thus, only main questions were asked and the researchers limited the probing questions. Also in this study, the researchers were focused on two main factors which are *Personal and Organizational Factors* and disregard any other possible factors that may influence the knowledge productivity. Future study should address all these limitations and conduct a more in-depth study investigating other possible factors of knowledge productivity and in different research context.

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