

Time Management Capabilities: A Case of the Industrial Workers of the Gulf Cogeneration Company Limited's Clients

**ความสามารถในการบริหารเวลา : กรณีศึกษาพนักงานในโรงงานอุตสาหกรรม
ที่เป็นลูกค้าของบริษัท กัลฟ์ โคลเจนเนอเรชั่น จำกัด**

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Abstract

The purpose of this research was to study the time management capabilities of the industrial workers of the clients of Gulf Cogeneration Company Limited, a company located in Saraburi Province, Thailand. In addition to investigating the overall time management capabilities of the workers, the study also examined six related aspects. They were 1) the analysis of problems related to time usage, 2) the formation of realistic objectives, 3) the planning of time usage, 4) the implementation of plans, 5) the assessment of time usage, and 6) the improvement of projected time usage plans and modification of time-wasting activities. The sample of this study consisted of 53 workers from factories at KeangKhoi District of Saraburi Province. Data were collected using a survey questionnaire consisting of 56 items. Data analysis was

conducted using arithmetic mean, standard deviation, t-test, one way ANOVA, and Scheffe's method. The time management capabilities of the workers were also compared by gender, age, educational level, and income. The results show that the workers of the client companies of Gulf Cogeneration Company reported a high level of capabilities in three areas: 1) overall time management, 2) the planning of time usage, and 3) the assessment of time usage. Male and female workers possessed a statistically significant difference in overall time management capabilities. However, there were no statistically significant differences in the overall time management capabilities among workers of different ages, educational levels, and income levels. Researchers suggested to apply research results to improve the time management capability of industry workers.

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In particular, the workers can benefit from workshops that teach them how to set realistic objectives, how to carry out plans,

how to develop more effective ways of estimating time needed for tasks, and how to identify and minimize time-wasting activities.

บทคัดย่อ

งานวิจัยนี้วัดถูกประสงค์เพื่อศึกษาความสามารถในการบริหารเวลาของพนักงานในโรงงานอุตสาหกรรมซึ่งเป็นลูกค้าของบริษัท กัลฟ์ โโคเจนเนอเรชั่น จำกัด จังหวัดสระบุรี ประเทศไทย โดยรวมและเป็นรายตัวน 6 ตัวน ได้แก่ 1) การวิเคราะห์ปัญหาที่เกี่ยวข้องกับการใช้เวลา 2) การกำหนดวัตถุประสงค์ที่สอดคล้องกับความเป็นจริง 3) การวางแผนการใช้เวลา 4) การดำเนินการตามแผน 5) การประเมินผลการใช้เวลา 6) การปรับปรุงแผนการใช้เวลาและปรับปรุงกิจกรรมที่ทำให้เสียเวลา กลุ่มตัวอย่างในการศึกษาร่วมนี้ประกอบได้ด้วย พนักงาน 53 คน จากโรงงานอุตสาหกรรม จำกัดต่างๆ จังหวัดสระบุรี แบบสอบถามที่ใช้ประกอบด้วยจำนวน 56 ข้อ สถิติที่ใช้ในการวิเคราะห์ข้อมูล ได้แก่ ค่าเฉลี่ยและค่าเบี่ยงเบนมาตรฐาน การทดสอบค่าที่ การวิเคราะห์ความแปรปรวนแบบทางเดียวและการวิเคราะห์ความแตกต่างรายคู่ด้วยวิธีของเชฟเฟ่ งานวิจัยนี้ได้เปรียบเทียบความสามารถในการ

บริหารเวลาของพนักงานจำแนกตามตัวแปร เพศ อายุ ระดับการศึกษา และรายได้ ผลการศึกษาพบว่าพนักงานที่เป็นลูกค้าของบริษัท กัลฟ์ โโคเจนเนอเรชั่น จำกัด มีความสามารถในการบริหารเวลาในระดับสูง 3 ตัวน ได้แก่ 1) การบริหารจัดการเวลาโดยรวม 2) การวางแผนการใช้เวลา 3) การประเมินผลการใช้เวลา พนักงานเพศชายและเพศหญิง มีความสามารถในการบริหารเวลาโดยรวมแตกต่างอย่างมีนัยสำคัญ อย่างไรก็ตาม ไม่มีความแตกต่างอย่างมีนัยสำคัญในการบริหารเวลาโดยรวมและโดยรวมระหว่างพนักงานที่ แตกต่างกันทางด้านอายุ ระดับการศึกษาและรายได้ ผู้วิจัยมีข้อเสนอแนะในการนำผลการวิจัยไปใช้ในการปรับปรุงการบริหารเวลาของพนักงานในโรงงานอุตสาหกรรม ให้ดีขึ้น โดยเฉพาะอย่างยิ่งการพัฒนาทักษะด้านการกำหนดเป้าหมายการดำเนินธุรกิจ ด้านการดำเนินการตามแผนที่วางแผนไว้ และด้านการปรับปรุงแผนการใช้เวลาและแก้ไขกิจกรรมที่ทำให้เสียเวลา

Introduction

A recent Google search for time management retrieved over 500 million hits. This number reverberates what Wang, Kao, Huan and Wu (2011) observed--that "most people feel time-pressured" (p. 562). Mackenzie and Nickerson (2009) echoed the same sentiment by beginning their book on time management with an acknowledgement of a very common complaint: "There's never enough time!" Obviously, most people find the daily 1,440 minutes inadequate.

Numerous studies on time management have been conducted in various settings such as the manufacturing company

(Nandhakumar & Jones, 2001), health care (Dean, Smith, Payne, & Weinman, 2005; Sarp, Yarpuzlu, & Mostame, 2005; Pollock & Grime, 2003), domestic labor (Oisnowitz, 2005), and academics (Cemaloglu & Filiz, 2010; Wang, Kao, Huan, & Wu, 2011). This is another evidence of the extensive nature of the issue of time management.

While the use of the term "time management" is widespread, Mackenzie and Nickerson (2009) proposed that the term is a misnomer because time cannot be controlled and managed in the way other resources can be managed. Other resources such as financial, physical, human, and information can

be augmented, reduced, transferred or otherwise controlled, while time cannot be manipulated. In short, time cannot be managed. On the same note, Spidal (2009) claimed that only the use of time can be managed, not time itself. As such, Spidal equated time management to self-management.

While most people wish for more time, researchers suggest that the main problem with time is not the amount of time that individuals have, but rather how they use it (Lakein, 1973). Zimbardo and Boyd (1999) blamed time management problems on the lack of conscious planning on how to use time. In other words, the time management issue is caused mainly by the lack of planning for the use of time.

A study on time management was carried out involving workers of the Gulf Cogeneration Company Limited (KaengKhoi 1Power Plant) which is a power plant under the Electricity Generating Public Company Limited Group (EGCO). The main business of the company is to generate and supply power to industries in Saraburi Province. The company noticed that there was a problem causing ineffective work among workers of its client factories. Time management was identified as one of the main problems. The company, in collaboration with Asia-Pacific International University, organized a series of seminars and workshops on time management and balanced life for its clients' workers. This research is part of the university's academic service activities intended to investigate the time management capabilities of the

workshop participants. The result of the study would be beneficial to the industrial companies in Saraburi Province in helping them to understand their workers' pattern of time usage and to look for ways to improve their time management.

Research Objective

There are two main objectives of the study. Firstly, the study aimed to explore and investigate the time management capabilities of the industrial workers of the Gulf Cogeneration Company Limited's clients. These time management capabilities include the analyses of problems related to time usage, the formation of realistic objectives, the planning of time usage, the implementation of projected plans, the assessment of time usage, and the improvement of projected time usage plans and revision of time-wasting activities. Secondly, the study aimed to compare time management capabilities of the industrial workers of the Gulf Cogeneration Company Limited's clients by gender, age, educational level, and income.

Related Literature

Even though the term "time management" is a misnomer (Mackenzie, & Nickerson, 2009), the term is used in this paper since it has been widely accepted by society, and used extensively in research (Barsan, Bondera, Miricescu, & Roca, 2014; Arnold & Pulich, 2004).

Green and Skinner (2005) defined time management as "the use of time to achieve work and life goals"(p. 125).This definition is

based on the assumption that recording and managing time has the potential to help a person effectively deal with his or her time (Drucker, 1966). Koch and Kleinmann (2002) offered a second definition. They looked at time management as "the self-controlled attempt to use time in a subjectively efficient way to achieve outcomes" (p. 201). This definition highlights three important dimensions of time management. First, time management behaviors are intended to achieve some goal. Second, prioritizing is necessary for time management to be meaningful. Finally, knowing what to work on, when and how much time to finish the work creates efficiency by getting more done in less time with more quality outcomes. The claim is also similar with those of other researchers. In addition to goal setting, prioritization and effective estimation of time, Macan, Shahani, Dipboye, and Phillips (1990) suggested two other dimensions. They are 1) the creation of mechanics of time management (e.g., making lists, scheduling), and 2) a preference for organization.

Some researchers identified key time management activities framework as consisting of three main categories of generation: projection, revision, and implementation (Mumford, Schultz, & Van Doorn, 2001).

Another way of viewing time management is by examining different capabilities required in effective time management. This view is exemplified in Lokam's (2007) six aspects of time management capabilities. The capabilities

are the analysis of problems related to time usage, the formation of realistic objectives, the planning of time usage, the implementation of plans, the assessment of time usage, the improvement of projected time usage plans and revision of wasted time activities.

Effective time management is desirable since it allows people to accomplish more in less time (Harung, 1998) and it improves productivity and eliminate time wasters (Hart-Hester, 2003). MacKenzie and Taylor (1986) listed a number of other benefits. They proposed that with good time management skills, one is in control of one's time, stress and energy levels. One can maintain balance between one's work and personal life. One finds enough flexibility to respond to surprises or new opportunities.

In conclusion, literature indicates that effective time management requires the ability to identify and set priorities (Barsan, Bondera, Miricescu, & Roca, 2014; Macan, Shahani, Dipboye, & Phillips, 1990; Tyler, 2002), to make realistic plans (MacKenzie and Taylor, 1986), to have a degree of self-control (Koch & Kleinmann, 2002), to organize well (MacKenzie and Taylor, 1986), and to recognize time as a resource (Kerzner, 1992).

Methodology

This study was a survey type research that focused on investigating overall time management capabilities and its six related aspects: the analyses of problem related to time usage; the formation of realistic objectives; the planning of time usage; the implementation of plans; the

assessment of time usage; and the improvement of projected time usage plan and revision of time-wasting activities, compared by gender, age, educational level, and income of industrial workers who were the clients of the Gulf Cogeneration Company Limited. A research sample of 53 workers was selected from the participants of the workshop on time management and balanced life. For data collection, a set of questionnaire exploring information about qualifications and time management capabilities was developed based on the literature on time management. The six aspects of time management capabilities and most of the question items were adapted from the work of Lokam (2007) which was intended to investigate the time management capabilities of university students. The questions from Lokam's (2007)

work were revised to fit with the need of this study. Some of the question items were developed based on opinions of three experts. The Item Objective Congruency Index (IOC) was employed to validate the questions. The question items with IOC index higher than 0.50 were accepted and used in the questionnaire. In order to test the proper reliability of the tool, a pilot set of questionnaire was administered to thirty (30) graduate students at a university other than the research sample and calculated for proper reliability value by using Cornbrash's Coefficient Alpha. The value of the overall questionnaire was 0.88. A set of 56 items with the 5-point Likert scale (5 = very true of me, 1 = very untrue of me) were used in the questionnaire. The researchers set the following criteria to interpret the result:

Table 1: Mean Scores and Their Meanings

Mean Score	Meaning
4.50 to 5.00	Very high time management capabilities
3.50 to 4.49	High time management capabilities
2.50 to 3.49	Moderate time management capabilities
1.50 to 2.49	Low time management capabilities
1.00 to 1.49	Very low time management capabilities

Results

Biographical Information

Table 2 shows that most of the participants were male (83.02%). In terms of education, the majority (75.47%) held a bachelor degree and more than half

earned a salary of less than or about 35,000 Baht per month. The ages of the participants were distributed almost equally from lower than 25 years old to 44 years old. Table 1 shows the results from the descriptive analysis.

Table 2: Biographical Information

Variable	Sample (53)	Percentage
Gender		
Female	9	16.98
Male	44	83.02
Age		
Lower than 25 years old	12	22.64
25 – 29 years old	8	15.09
30 – 34 years old	8	15.09
35 – 39 years old	8	15.09
40 – 44 years old	10	18.87
45 – 49 years old	5	9.43
More than 49 years old	2	3.77
Education		
Lower than bachelor level	8	15.09
Bachelor level	40	75.47
Master level	5	9.43
Salary		
15,001 – 20,000	6	11.32
20,001 – 25,000	9	16.98
25,001 – 30,000	14	26.42
30,001 – 35,000	2	3.77
More than 35,000	22	41.51

Overall Level of Time Management Capabilities

The results of this study show that the workers of the client companies of Gulf Cogeneration Company reported a high level of overall time management capabilities ($\bar{x} = 3.50$, S.D. = 0.33). The workers reported moderate time management capabilities in four aspects: the analyses of problems related to time usage, the formation of realistic objectives, the implementation of

plans, and the improvement of projected time usage plans, and revision of time-wasting activities. The workers also indicated high level time management capabilities in the last two aspects: the planning of time usage, and the assessment of time usage. Table 3 shows the level of time management capabilities of these workers.

Table 3: Mean Scores, Standard Deviation, and the Level of Time Management Capabilities

Time management capabilities	\bar{X}	S.D.	Capability Level
The analyses of problem related to time usage	3.43	0.49	Moderate
The formation of realistic objectives	3.23	0.43	Moderate
The planning of time usage	3.53	0.47	High
The implementation of plans	3.29	0.42	Moderate
The assessment of time usage	3.53	0.51	High
The improvement of projected time usage plan and revision of time-wasting activities	3.35	0.46	Moderate
Total	3.50	0.33	High

Level of Time Management Capabilities Categorized by Gender

Table 4 shows a comparison of the level of time management capabilities between the male and female workers in both the overall time management capabilities and the six related aspects. The results of the t-test show that male and female workers showed a statistically significant difference

in overall time management capabilities ($p > 0.05$). Female workers possessed a slightly higher level of time management capability in all aspects. However, male and female workers possessed no statistically significant difference in the level of time management capability in the six aspects ($p > 0.05$).

Table 4: A Comparison of the Level of Time Management Capabilities in Overall and Each of the Six Aspects Categorized by Gender

Time management capabilities	Female (n=9)		Male (n=44)		t	p
	\bar{X}	S.D.	\bar{X}	S.D.		
The analyses of problem related to time usage	3.69	0.41	3.38	0.493	1.79	0.08
The formation of realistic objectives	3.32	0.49	3.21	0.43	0.69	0.49
The planning of time usage	3.73	0.41	3.49	0.47	1.43	0.16
The implementation of plans	3.52	0.43	3.49	0.50	1.86	0.07
The assessment of time usage	3.73	0.52	3.49	0.50	1.31	0.20
The improvement of projected time usage plan and revision of time-wasting activities	3.57	0.62	3.30	0.41	1.63	0.11
Total	3.71	3.46	3.33	0.32	2.17	0.04

Level of Time Management Capabilities Categorized by Age

The results of One-Way ANOVA show that there was no statistically significant difference in the overall time management capabilities among workers of different ages ($p > 0.05$). However, there was a statistically significant difference in the analyses of problems related to time usage among workers at different age levels ($p > 0.05$). Table 5 shows the level of time management capabilities of these workers by age.

Table 5: A Comparison of the Level of Time Management Capabilities in Overall and Each of the Six Aspects Categorized by Age

Variance	F	P
The analyses of problems related to time usage	2.43	0.04
The formation of realistic objectives	1.68	0.15
The planning of time usage	0.24	0.96
The implementation of plans	0.92	0.49
The assessment of time usage	1.08	0.39
The improvement of projected time usage plans and revision of time-wasting activities	1.48	0.21
Overall	0.33	0.92

The aspect of analyses of problem related to time usage was further tested to determine which of the means for the age levels were significantly different from the others by the Scheffe's method. The results, however, show that there was no statistically significant difference in any pair of age levels to the time management capabilities aspect of analyses of problem related to time usage ($p > 0.05$).

Level of Time Management Capabilities Categorized by Education Level

The results of the One-Way ANOVA, as presented in Table 6, show that there was no statistically significant difference between the overall time management capabilities and the six related aspects among workers of different educational levels ($p > 0.05$).

Table 6: A Comparison of the Level of Overall Time Management Capabilities and Each of the Six Aspects Categorized by Educational Levels

Variance	F	P
The analyses of problems related to time usage	0.20	0.82
The formation of living objectives	1.19	0.31
The planning of time usage	0.23	0.79
The implementation of projected plans	0.67	0.52
The assessment of time usage	0.24	0.79
The improvement of projected time usage plans and revision of wasted time activities	0.31	0.73
Overall	0.23	0.79

Level of Time Management Capabilities Categorized by Income

The results of the One-Way ANOVA as presented in Table 7, show that there was no statistically significant difference between the overall time management capabilities and each of the six related aspects among workers of different income levels ($p > 0.05$).

Table 7: A Comparison of the Level of Time Management Capabilities in Overall and Each of the Six Aspects Categorized by Income Level

Variance	F	P
The analyses of problems related to time usage	1.95	0.12
The formation of living objectives	0.28	0.89
The planning of time usage	0.30	0.88
The implementation of projected plans	0.71	0.59
The assessment of time usage	0.35	0.84
The improvement of projected time usage plans and revision of wasted time activities	0.79	0.54
Overall	0.16	0.96

Discussion and Conclusions

This study examined both the overall time management capabilities and six related aspects: the analyses of problems related to time usage; the formation of realistic objectives; the planning of time usage; the implementation of projected plans; the assessment of time usage; and the improvement of projected time usage plans and revision of time-wasting activities, compared by gender, age, educational level, and income of industrial workers of the clients of Gulf Cogeneration Company Limited. The results show that the overall level of time management capabilities was high. This finding is different from other prior studies on time management in Thailand which mostly reported low and moderate levels of time management capabilities (Lokam, 2007; Lokavit, 2008). This may be caused by the demographic differences among the respondents. Most of the prior studies examined the time capabilities of high school and university students (Lokam, 2007; Lokavit, 2008), while this study looked at the time management of factory workers who tended to be older. The results of this study suggest that the time management capabilities of older working people are higher. The results of the analysis of the six aspects of time management suggest that the workers possessed high levels of time-planning skills, and that they tended to assess their use of time. However, the analyses on problems related to time usage, the formation of realistic objectives, the implementation of projected plans, and

the improvement of projected time usage plans and revision of time-wasting activities, were at a moderate level. The results seem to suggest that the workers were not efficient in setting objective, implementing plans, analyzing time, and making improvement. One explanation for this lack of efficiency is culture. Li and Hung (1997) proposed cultural reasons for the Thais' struggle with some of the aspects of time management. Though the Thais have adopted modern management principles, the Thai way of management and handling work has always been laidback which Wedchayanon (2002) labeled as "slow life".

The results of this study also suggest that female workers in the industrial workplace reported higher time management capabilities than male workers. This finding is consistent with the results of other prior studies in educational institutions (Lokavit, 2008; Lokam, 2007; Naglieri and Rojahn, 2001). This is because many female workers feel more pressure in juggling between career and family (Worthley, MacNab, Brislin, Ito, and Rose, 2009). As a result, they learn to manage their time so that they can balance their career and family life.

The finding that there is no statistically significant difference in the time management capabilities of the industrial workers of the Gulf Cogeneration Company Limited's clients regardless of their ages, educational levels, and income levels, can be interpreted optimistically. This is because the workers may have received training from the companies and have been able to develop the time management

capabilities from the very beginning of the workers career (Pomsuwan, 2006). In this situation, these characteristics make little difference.

In light of the results of the statistical analyses, workers of the clients of Gulf Cogeneration Company Limited generally have high level of time management capabilities. The results also indicate that they can benefit from workshops that teach them how to set realistic objectives, how to carry out plans, how to develop more effective ways of estimating time needed for tasks, and how to identify and minimize time-wasting activities.

Limitations and Further Research

There are many limitations in this study. First, this study is limited to the industrial workers at KeangKhoi District, Saraburi Province. Second, the number

of sample is too small and limited only to the industrial workers attending the time management seminar conducted by Asia-Pacific International University. It is possible that the existing conditions of these workers may be applicable in other types of work at different organizations. However, the results may not be generalizable. Finally, the measurements of the time management capabilities were originally developed to examine the time management skills of university students, not industrial workers (Lokam, 2007; Lokavit, 2008). Though adjustments were made to the instrument to increase validity and reliability, it has not gained recognition or wide acceptance. As such, the measurement should be further improved so that it can be a robust tool to assess time management capabilities in other contexts.

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