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The applied, knowledge, and work-based oriented project management coaching frame-work (AKW-PMCF)

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COACHING

# THE APPLIED, KNOWLEDGE, AND WORK–BASED ORIENTED

# PROJECT MANAGEMENT

## COACHING FRAMEWORK (AKW–PMCF)

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**Abstract:** Coaching is an effective leadership tool for assisting project managers in coping with the pressure and the demand of managing complex projects successfully by balancing time, scope, resources and quality constraints. However, there is a lack of project management specific coaching frameworks. Hence, this paper aims to develop an "applied, knowledge, and work-based" oriented project management coaching framework (AKW-PMCF) which helps professionals at different levels to cope with project management challenges. We applied design science methodology in this research. We collected the data via explorative survey from project management professionals and employed descriptive analysis when analysing the data. As a result, we developed AKW-PMCF. AKW-PMCF consists of eight coaching steps and seven knowledge areas. We then evaluated AKW-PMCF with Kirkpatrick and Kirkpatrick (2016)'s learning model and technology acceptance model (TAM) via experts' feedback. The results showed that AKW-PMCF improved the project management skills of the project professionals (the experts) and they will apply the framework for coaching their team members. This research has extended the existing coaching literature by producing AKW-PMCF, broadened the TAM's application in assessing a non-technological management product, and provided an applied and work-based method for aspiring coaches in project management. In addition, AKW-PMCF is instrumental for the project managers who would like to serve as coaches in their project team.

## 1 Introduction

Project management is an increasingly popular profession as the global economy is becoming more projects oriented due to increased opportunities. According to PMI (2017), there are 87.7 million project management oriented roles worldwide by 2027. Project managers must ensure that the organisation's mission and vision are understood so that they conduct the project by linking the mission with the company's interests (Joseph, 2014).  Leadership skills are essential in managing not only single but a multitude of activities due to the challenging project management environment (Berg & Karlsen, 2016). Moreover, project managers should also equip with not only with technical skills but also interpersonal skills such as motivation, communication, influencing, negotiation, decision making and problem-solving skills to build a high performing team (Ramazani & Jergeas, 2015). However, project managers are always working under pressure due to increasing level of complexity and demand in project environments (Berg & Karlsen, 2013; Bjorvatn & Wald, 2018).

Coaching is a useful leadership tool in helping project managers to cope with challenges such as managing people effectively, project uncertainty, culture development, self and staff motivation (Berg & Karlsen, 2007). Coaching focusses on coachee's personal development and identifies the required resources to achieve the goals (Anghel & Voicu, 2013). Coaching is different from mentoring, teaching, training, and counselling. Coaching focuses on the current situation and what action to take for getting to the desired place in the future. The coach assists the coachee to uncover their answers with clarity about what they want to achieve in the future and how to address their limitations. Whereas mentoring, teaching, training and counselling are activities where a mentor guides the mentee, the teacher transfers knowledge and information the student lacks, training is the act of showing a person a particular skill or type of behaviour and counselling is focusing on understanding a person's past events (Zenger and Stinnett 2010).

Despite there are many project management resources in outlining the criteria of being a successful project manager, the focus is still on the technical aspect rather than the soft or human aspect (Petter & Randolph, 2009; Pollack, 2007). And project failures are commonly associated with the human element of the project such as a poor relationship between the project team and the relevant stakeholders (Ewin, Luck, Chugh, & Jarvis, 2017).  Therefore, organisations should consider coaching as a way to enable project managers in developing the soft skills that most project management education programs do not cover (Ramazani & Jergeas, 2015; Thompson & Cox, 2017). There are various coaching methodologies and frameworks in business environments. However, there is a lack of project management specific coaching frameworks. Hence, this research aims to develop a project management coaching framework which enables project management coaches to improve their coaching skills by providing a structure and guidance when coaching project managers.

In this paper, we will first review the related literature on project management and various coaching methodologies in Section 2. Section 3 describes design science as the research methodology employed in developing the framework. Section 4 illustrates the framework and Section 5 depicts the evaluation results from the experts' feedback. We conclude the paper by discussing the theoretical and practical contributions, limitation, and future work.

## 2 Project Management Coaching Methodologies

### 2.1 Project Management and Key Criteria of Successful Project Managers

Project management activities consist of planning, motivating, and controlling project aspects and motivating everyone involved in the project in order to achieve the time, cost, and performance objectives (Lester, 2007). Project management is knowledge intensive as it involves the application of knowledge, skills and techniques of project teams in ensuring a successful project (Joseph, 2014; Schwalbe, 2014).

The common project management methodologies used in the industry are  Project Management Body of Knowledge (PMBOK) (Ghosh, Forrest, Dinetta, Wolfe, & Lambert, 2012), PRINCE2 (PRojects IN Controlled Environments) (Axelos, 2017), Agile (Goodpasture, 2010; Paulk, 2002), and Lean project management (Stellman & Greene, 2014).

For ensuring successful project management, it is crucial for all parties involved to commit to using a standard set of processes and procedures in managing and controlling the project, followed by monitoring the achievement against the project plan. Moreover, there is a need to identify the variation by comparing actual progress and planned progress so that project managers can plan and execute corrective actions (Young, 2016). Due to the complexity of the project management environment, project managers usually face individual and technical challenges. Individual challenges include leadership (e.g., lack of confidence and self-esteem, poor communication and motivation skills) (Berg & Karlsen, 2016) and stress (e.g., illness, absence, high employee turnover, burnout, decreasing job satisfaction and wellbeing) (Berg & Karlsen, 2007, 2013); whereas technical challenges include keeping up with the latest development in the project knowledge domain and skills in dealing with complex projects and uncertainties (Neuhauser, 2007). Therefore, a successful project manager should equip not only technical skills (hard skills) but also the leadership skills (soft skills) that are paramount to project management (Berg & Karlsen, 2016; Clarke, 2016). **Table 1** illustrates the skills required for a successful project manager.

| Hard Skills | Soft Skills |
|---|---|
| Requirement management<br>Project organisation, planning, coordinating and control<br>Risk management<br>Change management<br>Time, Budget, procurement, quality, scope<br>Team management<br>Stakeholders management<br>Quality management<br>Use of tools, methods, techniques and control | Workflow and people management<br>Customer service<br>Customer retention<br>Joyous atmosphere creation for project team<br>Going behind stakeholder expectation<br>Communication skills and commitment<br>Trust, motivational and ability management<br>Emotional intelligence and improvisation<br>Stress and conflict management<br>Leadership skills and personal charisma<br>Flexibility and creativity<br>Ability to recognize opportunities<br>Problem solving |

Table 1 Skills required for a successful project manager (Blaskovics, 2016; DuBois, Koch, Hanlon, Nyatuga, & Kerr, 2015; Gorog, 2002; Ravindranath, 2016; Riaz, A., Haider, 2010)

## 2.2 Coaching Methodologies in Business Environment

Coaching is an intensive and systematic support for individuals or groups using a range of behavioural methods and techniques to assess them for achieving self-congruent goals or change and development in order to enhance their personal wellness and professional performance which eventually leading to their organisations effectiveness (Cox, Bachkirova, & Clutterbuck, 2014; Roger, 2012; Segers, Vloeberghs, Henderickx, & Inceoglu, 2011). Coaching helps individuals to learn rather than to teach them, and it unlocks their potential to maximise their performance (Whitmore, 2009). Coaching is an extended cognition where a new piece of knowledge is employed for a new explanation or to fill the gap in the existing explanation. The practices associated with coaching include building rapport, listening, reflecting, clarifying, goal setting, using intuition, giving feedback, demonstrating empathy and critically questioning (Cox et al., 2014).

Coaching can be applied to solve problems, motivate staff, delegating, team building and relationships issues, task performance, appraisal, and assessment, staff development, team reworking, planning and reviewing (Whitmore, 2009). Coaching can assess project managers in achieving a better result by emphasising on thinking pattern development, behaviour pattern development, learning pattern development and emotional pattern development (Madsen, 2012). It is recognised as one of the best practice in talent management and regularly practised in organisations such as executive coaching. Executive coaching has grown considerably in the past decade (Segers et al., 2011), it is an action learning process related to the individual directed at building his or her capability, knowledge, focus and commitment to achieve professional and organisational goals (Campone, 2015). There are various coaching models with different focus used in coaching (Beattie et al., 2014). **Table 2** depicts the key coaching models in the business environment, and their characteristics compared to the project management specific coaching process suggested by Berg and Karlsen (2007).
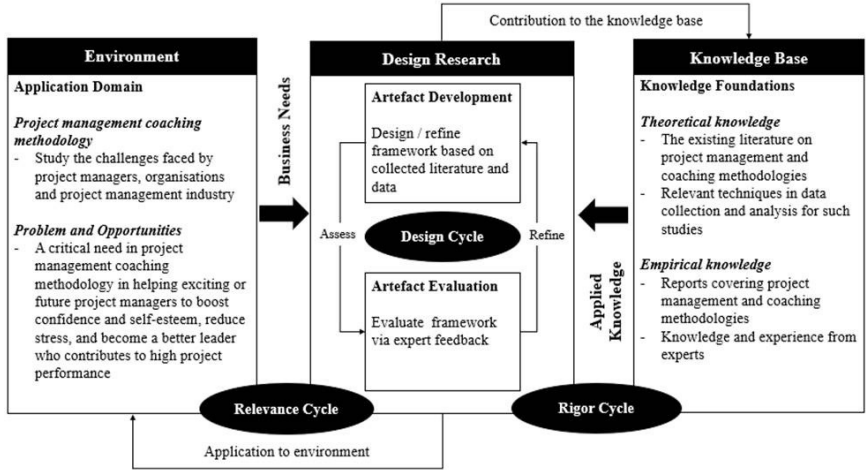
Based on the synthesis in **Table 2**, we found that there are a few limitations with the mentioned coaching models. GROW, CIGAR and ACHIEVE coaching models do not have a step for building trust and rapport with the coachee. The trust aspect poses a challenge for a novice coach. Starting the coaching process by setting the desired goal in the GROW model is risky if the goal is wrong from the beginning. The coaching model should enable coaches to reveal the current reality by challenging the coachee with open questions to uncover the underlying problem. If the coach does not discover the problem, the problem will be fixed on the surface and will continue to happen. The CIGAR and ACHIEVE models have to be applied by an experienced coach as these models require a lot of patience to ask a lot of questions and allow the coachee to come up with alternatives. Moreover, the coaching process in the GROW, FUEL and ACHIEVE models do not have a step where the coach can ask the coachee to talk about the potential challenge or obstacle that stops him or her for achieving the desired goal. Missing this step, especially for a novice coach can lead to a coaching failure where the coachee faces the same obstacle but not know how to deal with it. Hence, the modern coaching framework should address these limitations.

## 3 Research Methodology

### 3.1 Design Science Research

Design Science Research (DSR) has a problem-solving paradigm where it extends the boundaries of human and capabilities in organisations by seeking to create new and innovative artefacts (Hevner, March, Park, & Ram, 2004). DSR originates in information systems research (Gregor & Hevner, 2013), and now it is widely applied in multidisciplinary research such as project management (Pournader et al., 2015). DSR aims to deliver artefacts which consist of the body of knowledge in meeting specific objectives or solving real-world problems (Simon, 1997). Artefacts can be intangible (e.g. models and methods) or tangible (e.g. prototypes and software) (March & Smith, 1995). In this research context, the project management coaching framework is an artefact as it is designed to help working professionals to become successful project managers (Ahlemann, El Arbi, Kaiser, & Heck, 2013). Hevner (2007) propounds the three research cycles in DSR (relevance, rigor, and design cycles) to inform the development of the framework in **Figure 1**. The relevance cycle gathers the coaching requirements from the project management environment as part of designing this framework.

Table 2 Key coaching models and their characteristics

| Coaching Models / Berg and Karlsen (2007)'s project managment coaching | Developing | Diagnosing | Defining goals | Planning and implementation | Follow up, evaluating and giving feedback |
|---|---|---|---|---|---|
| 1. **GROW** (**G**oa1, **R**eality, **O**ptions, **W**ill/**Wh**ats next) (Whitmore, 2009) | | x | x | x | x |
| 2. **FUEL** (**F**rame the conversation, **U**nderstand the current state, **E**xplore the desire state, **L**ayout a successful plan) (Zenger & Stinnett, 2010) | x | x | | x | x |
| 3. **CIGAR** (**C**urrent reality, **I**deal, **G**aps, **A**ction, **R**eview) (Grant, 2005) | | x (*including identifying gaps*) | x | x | x |
| 4. **ACHIEVE** (**A**ssess current situation, **C**reative alternatives, **H**one goals, **I**nitiate options, **E**valuate options, **V**alid action program, **E**ncourage momentum) (Dembkowski & Eldridge, 2003) | | x | x | x | x |

Figure 1 The application of DSR cycles in developing project management coaching framework

This cycle includes empirical investigations ensuring the practicality of the framework (adapted from Pournader et al., 2015) (see Section 3.2). The rigor cycle covers existing literature or knowledge base that provides grounding theories, methods and the domain experiences which feed into the research, which contributes to the design cycle, where the framework is developed. The design cycle consists of activities such as designing and evaluating the framework (see Section 4 and 5). The evaluation activity ensures the project management coaching framework is functioning well before releasing it to the project management environment. In the rigor cycle, this research later adds new knowledge to the growing knowledge base of project management coaching (see Section 6.1). The three DSR cycles in-form the research design of developing the framework.

## 3.2 Data Collection, Analysis and Preliminary Findings

For gathering the requirements in developing the project management coaching framework, we have collected data via explorative survey. **Table 3** shows the key themes of the survey. The explorative survey is suitable for collecting information from a sample of people to illustrate, compare or evaluate their knowledge, opinion and behaviour concerning the development of the framework, and compare the results with the literature findings (Fink, 2012; Sekaran & Bougie, 2016). We created the explorative survey using Survey Monkey and distributed it to working professionals in the project management environment via social media platforms such as Linkedin groups. As a result, we managed to collect data from 51 respondents.
We then employed descriptive analysis in analysing the collected data. The descriptive analysis illustrates various aspects from the collected data and provides an accurate narrative of the phenomenon (Robson & McCartan, 2016).

This method helped us to identify and describe the reality in project management coaching by looking into relevant coaching and project management aspects, the domain knowledge and social skills required to be a successful project manager. Out of the 51 respondents, 71% of them are already working as a project manager or team leader, whereas the rest are planning to become a project manager. 21% of the respondents are from the construction section, 35% each from IT and project management organisation and the rest are from sectors such as finance and the public sector. 84% of the respondents found that soft skills are more important compared to hard skills, whereas 13% of them considered both hard and soft skills are equally important. 94% of the respondents believed that coaching is essential in the project management context.

| Survey themes | Descriptions |
|---|---|
| Demographic | Current position, Industry |
| Project management | Skills required (*hard* and *soft* skills)<br>*Hard skills* refer to project management, domain or technical skills<br>*Soft skills* refer to the intra or interpersonal skills<br>Preferred project management methodologies (e.g. Waterfall, PMBOK, PRINCE2, Agile/Scrum, Lean/Kanban) |
| Coaching | Validity of coaching in project management environment<br>Coaching expectations<br>Coaching popularity in own organisation / industry<br>Preferred coaching models in project management (e.g., GROW, FUEL, CIGAR, ACHIEVE, BERG and KARLSEN (2007)) |
| Others | Additional requirements for project management coaching |

Table 3 Themes of explorative survey

One respondent asserted that "coaching helps you (the existing or future project manager) to acknowledge your own potential and find the right answers/approach to solving problems in a way that it perfectly fits your abilities and skills. Having answers or solutions served to you by someone else (trainer, counsellor) may not fit into your overall spectrum of potential (ideas, perceptions, skills, abilities, knowledge)".  The top four coaching models that the respondents found relevant to the project management context are ACHIEVE, GROW, BERG and KARLSEN (2007)'s model, and FUEL. Respondents particularly highlighted a few key stages in the project management coaching process (see **Table 4**).

Moreover, most of the respondents suggested that organisations should tailor the coaching sessions based on their needs. Furthermore, organisations should ensure the coaching sessions are in plan for the entire project life cycle which is from project initiation to project closures. Regarding project management methodologies, a majority of the respondents felt that Agile/Scrum is commonly used in their work environment, followed by PRINCE2, PMBOK, and Waterfall. Hence, it is vital that the coaching knowledge areas tailored to the project management methodology adopted by the coachee's organisation. **Table 4** summarises the project management knowledge areas (hard skills), soft skills required, and the preferred coaching processes in project management according to the respondents' feedback.

| Knowledge Areas (Hard Skills) | Soft Skills | Coaching Processes |
|---|---|---|
| Fundamental of project management<br>Project management office (PMO)<br>Project initiation<br>Project planning and tools<br>Project implementation<br>Project monitoring and control<br>Project closure | Motivation<br>Communication<br>Critical thinking<br>Leadership<br>Personal skills (e.g., self-belief, self-awareness, self-management, drive for improvement, personal integrity)<br>Team management<br>Change management<br>Negotiation<br>Influencing<br>Decision making | Develop trust<br>Assess the current situation<br>Brainstorm creative alternatives<br>Set goals<br>Explore additional options<br>Evaluate options<br>Lay out plans<br>Follow up and feedback |

Table 4 Project management coaching requirements

## 4 AKW Project Management Coaching Framework (AKW-PMCF)

In this paper, we produce the AKW Project Management Coaching Framework (AKW-PMCF) following the DSR principles (see Figure 2). AKW stands for "Applied, Knowledge, Work-based" and it signifies the key characteristics of the PMCF. The framework provides a scientific and organised coaching process and guidance to the coach.
This framework is applied and work-based as it covers the project management coaching requirements from the working professionals, also it consists of the essential project management knowledge areas during the coaching session. The coach can be a professional coach in project management or a project manager acting as a coach to the team members. AKW-PMCF consists of the eight essential coaching processes (see **Table 5**) and seven project management coaching areas (see **Table 6**) covered in coaching sessions. The project management coaching areas cover how hard skills elements interlink with soft skills. AKW-PMCF provides the coach with a structural guideline in project management coaching. By following the eight coaching processes, and depending on coachee's challenge, the coach can employ any of the coaching areas in helping the coachee to identify the underlying root cause and find alternatives to resolve the issue.
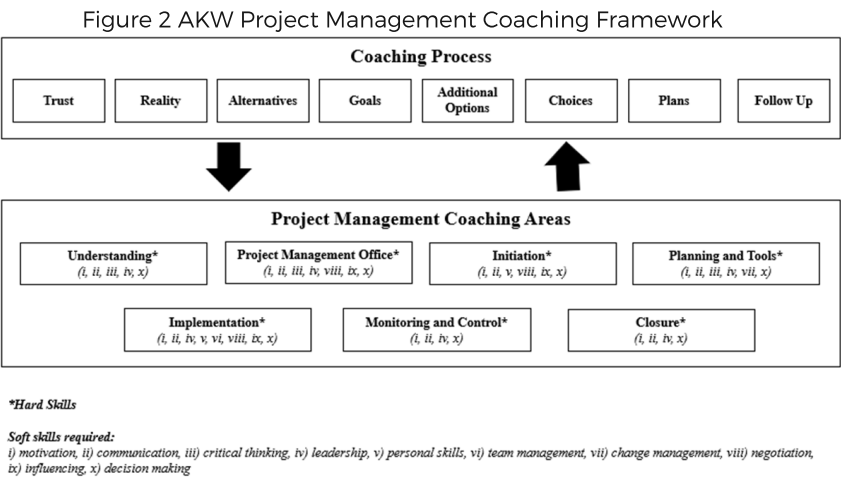


Figure 2 AKW Project Management Coaching Framework

Table 5 Project Management Coaching Processes in AKW-PMCF

| Steps | Descriptions |
|---|---|
| Step 1 Trust | To build rapport and form a strong connection<br>To build trust and rapport by asking questions to find out who the coachee is, what he or she does, the coach will work with the coachee in partnership, explaining the process, expectations from both side, confidentiality agreement, agreement on responsibility and accountability |
| Step 2 Reality | To analyse in depth what is the current reality<br>To ask the coachee what he or she wants to talk about in project management. What is the current situation? It can be the project milestones are not achieved, for example, the personal life challenges affecting his or her professional life. The coach will challenge the coachee with a few open-ended questions to identify and clarify the problem that the coachee cannot cope. The open questions can take another direction and reveal an underlying problem that the coachee is not aware. The problem that will come to the surface may be different from the initial issue. The purpose of this step is to identify in depth with clarity the issue that can turn up as another issue. For instance, the coachee has been struggling with meeting the project deadlines, and there are enough resources in the team, after the coaching session, it turns up that the issue is caused by the low motivation of the coachee in the project |
| Step 3 Alternatives | To find alternative solutions<br>When the problem is identified as a lack of motivation, for example, the coach will challenge the coachee to come up with alternatives to resolve this problem. The relevant questions are where this issue is leading to, how he or she feels about it, how important to address the issue, what is doing or not able to do, why there is a lack of motivation, what are the incentives used to motivate himself, herself or the team members, and how he or she will resolve the problem. The coachee can then suggest a few alternatives and chose the one that will best solve the problem |
| Step 4 Goal | To set up a SMART goal or goals<br>Based on the coachee's response, the coach will then ask the coachee what the goal or goals he or she wants to achieve in that area. It is advisable to accomplish the first goal first and not performing both goals at the same time. |
| Step 5 Options | To find the necessary options to achieve the goal<br>The coach will ask more questions for the coachee to come up with alternatives on how he or she will achieve the goal or goals. What will the coachee do? |
| Step 6 Choices | To evaluate and choose the appropriate option<br>The coach will assist the coachee to evaluate each option he or she suggested for solving the problem. The purpose is to see which option is achievable and feasible by considering factors such as resources and timescale. |
| Step 7 Plan | To set a successful action plan<br>The coach assists the coachee in setting up a successful action plan with milestones which include what needs to be done, who will do it, how and when to do it, and how much to spend on it. |
| Step 8 Follow up | Follow up, monitoring performance, feedback, rewards<br>The coach will contact the coachee by phone calls or emails to conduct follow up activities such as motivating, giving or receiving feedback to or from the coachee. The follow up activities are essential in measuring or keeping track of the coachee's performance. |

## 5 Evaluation

### 5.1 Evaluation Procedure and Experts' Feedback

We applied expert feedback to evaluate the validity and utility of AKW-PMCF. Expert feedback is an established method to assess the claims, validity or trustworthiness of the research outcome (Sandelowski, 1998). **Table 7** demonstrates the evaluation questions drawn by the Kirkpatrick and Kirkpatrick (2006)'s learning model (KLEM) for the validity aspect and the technology acceptance model (TAM) from Marangunić and Granić (2015) for the utility aspect. KLEM is commonly employed for assessing the effectiveness of coaching programmes (Ely et al., 2010) such as the work from Yoon, Shin, Bouphavanh, & Kang (2016). In this paper, we adopted KLEM in measuring the success or failure of the coaching session conducted via AKW-PMCF. We also used KLEM to study the participants' likelihood of applying what they had learned and if their skills improved or developed as a result of the coaching session, and also whether what they learned will have an impact on them and their organisations. Similar to Ta and Prybutok (2018)'s work, TAM was adapted to assess the acceptance of a non-traditional information system. The two main constructs of TAM we adapted were the perceived usefulness and perceived ease of use (Davis, 1989), followed by the other constructs for assessing the coachees satisfaction towards the framework. The evaluation procedure involves an hour coaching session with the selected experts followed by having them to respond to the evaluation questionnaire. In this research, we selected four experts who have different levels of project management working experiences.

| Project Management | Hard Skills | Soft Skills |
|---|---|---|
| 1.Understanding | *What is the Project:* To have a good understanding of the project. Differentiate project and work. Project objectives and deliverables, budget, project life. A project is a temporary endeavor as defined earlier and Work is the day to day activities usually performed.<br><br>*How to manage the Project:* What is the process, how to balance constraints of scope, cost, time and quality? What is the methodology in the project organisation? How to manage scope, time, cost, human resources, procurement, communication, quality, risk, integration? What are the criteria that make a good project manager? Understand the business side of the organisation, technical skills, social skills and doing the right thing for the project. | *Motivation:* One of the key drivers for project success. The project manager should be self-motivated, and he or she should motivate the team members to increase their performance for successful delivery. Maslow's hierarchy of needs (Maslow, 1943): psychological, safety, belongingness, esteem and self-actualisation.<br><br>*Communication:* Features in every project phase. Clear and effective communication is needed to communicate with stakeholders and team to manage the project effectively (Hwang & Ng, 2013; Larson & Gray, 2015)<br><br>*Critical thinking:* How to examine ideas, how to dig and understand the issues or ideas? How the ideas or issues impact the project and decide how to apply or resolve them? (Bresser & Wilson, 2010; Larson & Gray, 2015)<br><br>*Leadership:* Motivate, inspire, have a vision, communicate it and work with team toward the vision (Larson & Gray, 2015)<br>*Decision making:* The project manager can identify a problem or opportunity, look at the situation surrounding it, look for ways to resolve it and decide (Larson & Gray, 2015) |
| 2.Project Management Office (PMO) | *Running a project management office:* Larger organisations usually will establish PMO. Project managers can play the role of PMO in smaller organisations. How to set up the standards and best practices and compliance requirements? What are the supporting project methodologies? What are the project management tools? How to manage the resources and communication? How to mentor and train project managers?<br><br>*Managing a portfolio of projects:* How to evaluate and prioritise projects in the project portfolio? How to ensure the projects in the portfolio aligns with the organisation's strategic objectives?<br><br>*Selecting the right project:* How to capture the right ideas for projects? What are the project selection criteria? What are the exceptions in project selection? How to succeed in a project review board? | *Motivation, Communication, Critical Thinking, Leadership:* see descriptions in point 1<br><br>*Negotiation:* Apply in conflict, stakeholder, contract, requirements management. Look for mutual interests (Larson & Gray, 2015)<br>*Influencing:* The coach leads by example to build trust and commitment within the team (Larson & Gray, 2015) and use himself or herself as a tool by telling their own story as an example to help the coachee figure out own answers (Passmore, 2010).<br><br>*Decision making:* The project manager can identify a problem or opportunity, look at the situation surrounding it, look for ways to resolve it and decide (Larson & Gray, 2015) |
| 3.Initiation | *Getting a project off the ground:* Business case, identifying stakeholders, preparing the initial project definition, preparing the project charter, obtaining approval to move to the planning phase | *Motivation & Communication:* see descriptions in point 1<br><br>*Leadership, Negotiation, Influencing, Decision making:* see descriptions in point 2<br><br>*Personal skills:* Self-belief, self-awareness, self-management, drive for improvement, personal integrity (Stevens, 2008) |
| 4.Planning & Tools | *Planning:* Understand the project plan (work to be done, project cost, who will do the work, when the project will be done, how will the project be managed), identify work to be done, estimating work and cost, planning project resources, estimate the time the project will take, building schedule (Gantt chart), planning for quality, setting up a communication plan, setting up change management plan, managing risk, make ancillary plans, obtain approval to launch the project<br><br>*Tools:* Determine tools for scheduling and processing (e.g., Microsoft Excel for spreadsheet and PowerPoint for presentation) | *Motivation & Communication:* see descriptions in point 1<br>*Critical thinking, Leadership & Decision making:* see descriptions in point 2<br><br>*Change Management:* Recognising the need for change and start the change process, diagnosing what needs to change and create the vision of the desired future state, plan the intervention to achieve the desired states, prepare the implementation and monitoring progress, sustaining the change, leading and managing the people issue (Kotter, 2012). Missing these phases can fail in the change effort.<br><br>The project clients may presume change will bring negative impact to them. Hence, the coach shall suggest coachees on how to deal with the client's behavior and to deliver effective feedback to clients so that they can have a problem-solving discussion instead of being defensive (Burke, 2014; Cameron & Green, 2015) |
| 5.Execution/Implementation | *Kick off the project:* Preparing to execute the project, obtaining resources, holding a kickoff meeting, implementing plans<br><br>*Tame the process:* Identify problems and conflicts, defining project processes, guidelines for effectiveness, making things happen<br><br>*Keys to successful meetings:* Running effective meetings, identify types of project meetings, following up after meetings<br><br>*Transform people into a team:* Developing a team, evaluating team member performance | *Motivation & Communication with team:* see descriptions in point 1<br><br>*Leadership, Negotiation, Influencing & Decision making:* see descriptions in point 2<br><br>*Personal skills:* see descriptions in point 3<br>*Team management:* To foster team effectiveness by establishing team structure, defining team purpose and having the coaching behavior of strengthening team members' contribution and helping them use project resources effectively (Hackman & Wageman, 2005). |

Table 6 Project Management Coaching Areas in AKW-PMCF (continue...)

| 6.Monitoring/control | *Gathering progress information:* Choosing the data to collect, obtaining time and status, evaluating progress and performance, assessing progress and variance, earned value analysis (planned value, earned value, actual cost, estimating earned value measures in a graph, using additional earned value indicators), evaluating financials (determine the payback period, identifying the net present value, working out the internal rate of return) | *Motivation & Communication:* see descriptions in point 1 |
| | | *Leadership & Decision making:* see descriptions in point 2 |
| | *Getting a plan back on track:* Revise the plan by fast-tracking the project schedule, using different resources, asking people to work overtime, reducing scope, ensure the project on the right track such as identifying the problem, evaluating the situation, preparing a recovery plan, and monitoring the recovery. | |
| 7.Close | *Obtaining acceptance and other wrap-up tasks:* Determine whether the project is successful (developing and running acceptance tests), obtaining sign off, documenting the project (the project closure report), financial, legal, and administrative closure, project transitions (handing off information, transitioning resources) | *Motivation & Communication:* see descriptions in point 1 |
| | | *Leadership & Decision making:* see descriptions in point 2 |
| | *Setting up project archives:* Documenting a project for posterity, gathering information, organising the project archives, storing the project archives. | |
| | *Registering lessons learned:* How lessons learned help and gathering lessons learned | |

Table 6 Project Management Coaching Areas in AKW-PMCF

Two experts (R1 and R2) had the background in project management and considered themselves as inexperienced project managers, whereas the other two experts considered themselves as experienced project managers (R3 and R4), one had extensive experience in managing telecommunication projects and the other in managing construction projects.

| Evaluation Themes | Evaluation sub themes | Evaluation Questions |
|---|---|---|
| Validity (adapted from Kirkpatrick & Kirkpatrick, 2006) | Reaction | What is the degree you find coaching sessions enjoyable, engaging and relevant to their jobs by using the AKW-PMCF? |
| | Learning | To which extent you feel that your expected knowledge, skills, attitude, confidence and commitment would increase as a result of being coached by using AKW-PMCF? |
| | Behaviour | What is the degree you would apply what they learned during the coaching session when you return to the job? |
| | Results | What is the degree to which the coaching journey will impact you and your organisation? |
| | Overall coaching experience | What is your overall experience with AKW-PMCF? (e.g., is the framework effective?) |
| Utility (adapted from Davis, 1989; Marangunić & Granić, 2015) | Perceived usefulness | What is the degree to which you believe AKW-PMCF helps in improving the processes of project management? |
| | Perceived ease of use | What is the degree to which you believe that it is easy using the AKW-PMCF in helping project management professionals' better to overcome project management challenges? |
| | User satisfaction | How satisfied do you feel after participating in the coaching session guided by AKW-PMCF? |
| | Attribute of usability | Please identify five attributes in the coaching session that works well for you by using AKW-PMCF? |
| | | Is there anything that could be improved? |

Table 7 Evaluation themes and questions

## 5.2 Evaluation Results

We employed descriptive analysis in analysing the results collected from the four experts. Descriptive analysis provides the appropriate narratives that help us in examining the validity and utility aspects of AKW-PMCF (adopted from Robson & McCartan, 2016). In general, all four experts (R1, R2, R3 and R4) felt that the framework is valid in the context of project management coaching. They claimed that the framework is useful for them to improve their project management skills also for them to apply the framework for coaching their team members.

We assessed reaction, learning, behavior, results and the overall learning experience aspects in the lens of the validity of AKW-PMCF. From the reaction perspective, three experts (R1, R2, and R4) found that the coaching session was highly enjoyable and engaging whereas R3 found that the level of enjoyment and engagement is medium. The results showed that AKW-PMCF is an engaging coaching framework where coachees felt safe to talk and it enables the coach to build the rapport and trust with the coachees. Regarding the learning aspect, all four experts claimed that AKW-PMCF had increased their knowledge and skills highly in project management. As for behaviour aspect, the two experienced project managers (R3 and R4) expressed that it is highly likely that they will apply the knowledge gained in the coaching session in their job. The inexperienced project managers, R1 may apply what he has learned whereas R2 is not sure. In terms of the results aspect, R1, R3 and R4 believed that the coaching session has a high impact to them and their organisation whereas R2 was not sure about the impact of the coaching session to him. As for the overall coaching experience, all four experts found that the coaching session was good. For R1 and R2, as an inexperienced project manager, R1 found that the coaching session helped her a lot especially in guiding her to find the right solutions in project management; and R2 felt that the coaching session was a good experience. He added, "it helped me capitalise on my existing knowledge and experience by putting it into such a perspective, that I was able to find solutions to the challenges I needed to overcome, as well as ways to exploit the available opportunities." For R3 and R4, the experienced project managers, R3 expressed that the coaching session was a good experience as it helped him to see a situation in various perspective. Similar to R3, R4 thought that the coaching session was good for exploring ideas and motivating him in achieving his goals.

We also assessed the utility aspect of AKW-PMCF through the perceived usefulness, perceived ease of use, user satisfaction, and attributes of usability. Starting with perceived usefulness perspective, all four experts found that coaching using AKW-PMCF will increase their personal and team's skills and performance. The outcome showed that the coaching framework has provided a structural approach in helping the coaches to fill their skills gap or strengthen the skillsets and therefore increasing their performance. Regarding the perceived ease of use, the inexperienced project manager, R1 claimed that she could use the framework if a good instructions manual is provided, whereas R2, R3, and R4 expressed respectively that the coaching processes in AKW-PMCF were clear to understand and to use, the coaching sessions were easy to follow and easy to clarify the underlying issues. About user satisfaction, the inexperienced project manager R2 and experienced R4 expressed that they were satisfied that they were more aware of issues that surfaced during the session that they were initially unaware of them. R1 as an inexperienced project manager, felt satisfied with the whole coaching session and processes involved, as she felt she was more equipped to lead and deliver the project successfully. R3, the experienced project manager was satisfied with the level of understanding of the issue. Concerning attributes of usability, all four experts believe that AKW-PMCF is working well for them, and they intend to use the framework in the future. The key attributes solicited were "it is efficient, easy to understand, applicable in different situation, reliable, help to analyses own goals, schedule helps to stay focused on the main target, positive increase in self-confidence, planning is

amazing to set proper timing of the goal, choices supported on a proper focus, good process, and a sense of commitment is realized after the coaching session to the planned dates". R2, the inexperienced manager added the following comments in terms of the attribute of usability, "it is intuitive, helps roll out your thoughts associated with the issue at hand, natural flow of questions and guiding statements, easy to follow, non-intrusive, yet effective in unlocking your potential as you gradually become more aware of how things and concepts related to the domain connect. It is also an incremental approach that helps you build your thread of thoughts step by step, and you can add layer by layer until your vision is complete and you can clearly see the approach best suited for you." When asked about how to improve AKW-PMCF, R2 asserted that:" Some participants may be at the beginning of their career in project management and therefore in-experienced, so they might not be able to come up with a sound solution at the end of the session, they might just not have the answers to the challenges they don't possess specialist skills (hard skills), thus the framework might include a special branch in the process for this case, that gradually makes suggestions related to the principles of project management., just enough to get the participant through the complexity issue that he is stuck on". R4 suggested that the framework should consider merging the understanding and initiation coaching areas into initiation area as it is the phase where the project manager has to obtain the understanding of the project.

**6 Discussions and Conclusion**

6.1 Theoretical and Practical Contributions

This research posits theoretical and practical contributions. From the theoretical perspective, this research fills the gap where there is a lack of such project management coaching frameworks in the existing literature. Moreover, this research reviews the literature of various coaching models such as GROW (Whitmore, 2009), FUEL (Zenger & Stinnett, 2010),

CIGAR (Grant, 2005), and ACHIEVE (Dembkowski & Eldridge, 2003) that are commonly applied in the business environment, and together with the project management literature, this research produces AKW-PMCF which is theoretically grounded. Moreover, this research attempts the revolutionary approach by conjugating the learning model from Kirkpatrick and Kirkpatrick (2006) and technological acceptance model from Marangunić and Granić (2015) in assessing the validity and utility aspects of AKW-PMCF. The four-level taxonomy of the Kirkpatrick and Kirkpatrick (2006) is commonly applied in evaluating the effectiveness of coaching programmes. On the other hand, the technology acceptance model is an information system theory that focusses on how users accept and use technology. Inspired by Ta and Prybutok (2018)'s work, this research applied TAM in a non-technological system, but to a project management product. And this research shows that the non-conventional application of TAM works for in the project management context. This approach provides future research avenues for academics to expand the use of TAM.

From a practical perspective, this research delivers a unique, structural and all rounded approach to project management coaching. AKW-PMCF provides a systematic coaching method to coaches or project managers who are acting as the coach in the necessary project management coaching areas. AKW-PMCF covers essential project management knowledge, which is developed by studying various project management methodologies. The systematic processes enable coaches to help the coachees to find out the root cause of the problems which could be related to soft or hard skills challenges. The framework then guides coachees to find relevant solutions for addressing the challenges. Based on the evaluation results, it has shown that AKW-PMCF can serve as a generic coaching framework in various industries.

6.2 Limitations and Future Work

The key limitations of this research are the sample size used for the exploratory survey, and the number of experts participated in the coaching session as part of the research evaluation. In the future, we aim to increase the sample size when enhancing the coaching features in AKW-PMCF. Moreover, we plan to increase the number of experts from different industries for participating in the coaching sessions. This approach will improve the research rigour, and we can capture the industry-specific patterns. The results can later contribute to a customisable coaching framework for a specific industry. Also, we aim to automate the coaching process by delivering a technological coaching artefact, where we could provide a self-coaching service to the coachees. We will then apply the dimensions as part of the evaluation of this technological artefact in the future (inspired by Otte, Bangerter, Britsch, & Wüthrich, 2014).

Furthermore, we also aim to refine the existing feature of AKW-PMCF. Although AKW-PMCF is designed for project management professionals at different levels, we found that there is a need to impart a process for enhancing the hard skills for inexperienced coachees. As the inexperienced coachees are still in their early years of project management, it is challenging for them to derive a sound solution at the end of the session, just because they do not possess the specialist knowledge in project management. Moreover, we will also be examining the psychological literature for enhancing the soft skills coaching areas (inspired by Bluckert, 2006). Also, we will study the possibility to incorporating various project management methodologies such as PRINCE2 (Axelos, 2017) and Agile (Goodpasture, 2010; Paulk, 2002) in producing a methodological specific coaching framework.

> "...this research produces AKW-PMCF which is theoretically grounded and attempts the revolutionary approach by conjugating the learning model from Kirkpatrick and Kirkpatrick (2006) and technological acceptance model from Marangunić and Granić (2015) in assessing the validity and utility aspects of AKW-PMCF.
> From a practical perspective, this research delivers a unique, structural and all rounded approach to project management coaching."

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