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Workplace Factors that Shape Agile Software Development Team Project Success

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Abstract

Information technology (IT) project success depends on having a project manager with effective decision-making, leadership, and project management skills. Project success also depends on completing the project in a given budget, time, and scope. However, there is a limited understanding of the lived experiences of agile managers and the following workplace factors: cultural, functional, and organizational differences. The purpose of this phenomenological study was to understand these lived experiences of 10 agile software development team project managers or leaders at global workplaces based in the United States. The research questions were focused on the effect of these workplace factors on agile software development project success. In accordance with nonrandom purposeful sampling strategies, a snowball technique was used to find more participants. An open-ended, e-mail questionnaire was created and sent to participants to collect data. The data were coded to discern themes or patterns. According to study results, agile software development team members should acquire broader array of knowledge and experience, self-manage, and reduce time to market; culture is critical to agile team software development project success; leverage technical expertise and skills and foster team effectiveness ; align on outcome, work toward common goal, and same management structure;

Accomplish more tasks in short time frame; teams need to work through trust issues early in a project and get to a point where there is trust across everyone on the teams; all knowledge must be shared; teams should have a communal location for all written knowledge, like a wiki; and servant leadership - leaders should enable teams rather than direct them.

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This study has implications for positive social change because organizations that understand the workplace factors may be able to improve project management strategies and cost benefits leading to higher efficiency, profitability, and productivity thus benefiting management, employees, and customers.

Keywords: Agile Software Development Teams; Leadership; Workplace Factors.

1. Introduction to the Study

Many public and private sector organizations compete in the global marketplace. Some organizations are using agile software development (ASD) teams (ASDTs) as a way of developing software solutions for customers more efficiently and effectively [167]. Such ASDTs are employing state-of-the-agile software development methodologies (ASDMs), technologies, and processes [167]. However, information technology (IT) projects fail and cancellation rates continue to remain high. For instance, within the last decade, researchers have indicated that many IT / Information Systems (IT / IS) projects fail [40,169,181,206]. Weiling and Ping [220] noted that for an IT project to reach a desired goal or objective, the project manager must possess effective decision-making and leadership, and project management (PM) skills.

1.1. Background of the Study

Software development projects fail and cancellation rates remain high. One study, published in 2012 by Dr.Dobbs indicated that Agile had a 72% success rate, compared to a 64% success employing traditional methodologies. While better, an 8% betterment is barely a revolution. In today's competitive business environment, we need to do improve in terms of success rate [84]. Another study, carried out by McKinsey, indicated that half of IT projects with budgets of over $15 million dollars run 45% over budget and deliver 56% less functionality than anticipated. Put plainly, Agile is not a silver bullet. Projects still fail at approximately the same rate today as in 2001. It appears little has altered or evolved in this respect [84]. Additionally, Kropp's [120] agile study outcomes and argued that with respect to ASD methodologies what works for one team will not work on other.

Shenhar and Dvir [188] stated that more than 60% of IT projects are delivered late or over budget. Additionally, the Standish Group [206] found that 32% of the IT projects examined were successful and 68% of the IT projects were not successful. Emam and Koru [65] studied global IT projects in 2005 and 2007 and found that the overall failure and cancellation rates were high. Ke and Wei [110] noted that the success rate of enterprise resource planning (ERP) designs was approximately 20%. The 20% success rate consisted of ERP projects for all types of IT projects. There were several reasons for these software development projects failures and cancellations rates. For instance, IT managers may not identify and control software risks, which can contribute to project failures [181]. Researchers have demonstrated that many software development project failures also result from unidentified and uncontrolled risks [40,169,181,206]. Additionally, Kerzner [111] argued that some IT software development projects fail because project managers are not adequately monitoring schedule, cost, and scope variables. An IT manager's lack of proper leadership style and inadequate leadership skills may also contribute to project failure. For example, inefficient leadership leads to an increased risk of project failure. The IT manager's

leadership style plays a role in the outcome of the project [116]. ASDTs exhibit greater risks due to cultural, functional, organizational and language differences, and insufficient technical resources. Cultural, functional, and organizational differences and internal factors also effect IT projects [67,157,169]. Reed and Knight [169] posited that ASDTs face greater challenges and risks than a collocated team. Reed and Knight concluded that of the 55 projects they studied, seven were comprised of inadequate knowledge transfer, deficiency of the project team coherence, cultural and language differences, inadequate technical resources, inexperience with the firm and its processes, loss of core resource(s), and concealed agendas. These projects exhibited a significantly heightened risk for the ASDT versus for traditional team projects. However, researchers have recommended that more studies be conducted to understand why these software development projects fail and why cancellation rates remain high. Oza and Hall [157], Espinosa and his colleagues [67], Sharma and his colleagues [187], and Reed and Knight [169] argued that workplace factors such as cultural, functional, and organizational differences effect IT project success; however, limited studies are available to confirm the statement. As noted by Espinosa and his colleagues, Nair [146], and Reed and Knight, most researchers have studied specified variables of cost, scope, and schedule.

Organizational leaders can take proactive measures to help prevent the failure and cancellation of these software development projects. For instance, project managers must be cognizant of organizational issues and additional efforts must be created in order to coordinate IT with organizational business strategies. Team cultural cognizance, motivation, cohesiveness and synergy, and job satisfaction of the team members are needed in order to accomplish project success. The management team must also ensure that any dilemmas in communication, expectation, and interaction process are addressed and rectified before venturing on the project. Carte, Chidambaram, and Becker [34] posited that when firms become more complex, global, and dynamic, IT-linked projects are needed to streamline the business process to accomplish competitive advantage, and require innovative business solutions to design IT projects. Additionally, IT projects should be managed to produce economic value and competitive advantage. For a project to be successful, process and tools should be understood beforehand. To evaluate IT project success, project managers have to manage project efficiency, the effect on customer, business success, and long-term sustainable development [67].

Managers with good project management skills are needed to fulfill set goals or objectives. To lead efficiently in ASDT, the leaders of ASDTs necessitate relationship building, technical and leadership skills, and the ability to defuse the defeats of ASDT members [174]. Leaders with effective decision-making and project management skills can improve a project's success rate [116]. Leadership skills necessitated by leaders in ASDT climates include emotional intelligence, the ability to create an open and supportive climate, and to influence and guide by example [174].

1.2. Research Questions

The research questions were (a) what are the lived experiences of managers regarding the effects of the workplace factors of cultural, functional, and organizational differences on agile software development team project success?, (b) What are the lived experiences of managers regarding arbitrating task process variables (e.g., coordination, task programming and team communication, and knowledge) on the enhancement of the

likelihood of success, given the presence of these workplace factors?, and (c) What are the lived experiences of managers regarding a style that is best suited for managing an agile software development team? These three research questions were developed into the following subquestions:

1. What is your lived experience on an agile software development team?
2. What is your lived experience on how agile software development team cultural differences could effect agile software development team project success?
3. What is your lived experience on how agile software development team functional differences (e.g., when more than one area of functional expertise is represented within a team) could effect agile software development team project success or related to team-rated performance?
4. What is your lived experience on how agile software development team organizational differences (e.g., multiple vendors increase project complexity as an outcome of different and sometimes conflicting sets of goals and success measures) could effect agile software development team project success?
5. What is your lived experience on how effective agile software development team coordination (e.g., task programming and team communication) could enhance the chance of success of agile software development projects success?
6. What is your lived experience on how effective agile software development team trust could heighten the likelihood of agile software development project success?
7. What is your lived experience on how effective agile software development team knowledge sharing could heighten the chance of agile software development projects success?
8. What is your lived experience on how effective agile software development team knowledge management could heighten the likelihood of agile software development projects success?
9. What managerial style is best suited for managing agile software development team?

The study Subquestions 1 to 4 were derived from the Research Question 1, Subquestions 5 to 8 were derived from Research Question 2, and Subquestion 9 was derived from Research Question 3. In accordance with the nonrandom, purposeful sampling strategies, I employed a snowball technique to find more participants. A pilot test of the interview or subquestions was done as well with three participants. The study contained open-ended questions to collect data. I distributed these interview questions to participants via e-mail to collect data. I then coded and analyzed the data for themes and patterns.

2. Literature Review

Researchers indicated that IT projects continue to fail at a high rate. One study, published in 2012 by Dr.Dobbs indicated that Agile had a 72% success rate, compared to a 64% success employing traditional methodologies. While better, an 8% betterment is barely a revolution. In today's competitive business environment, we need to do improve in terms of success rate [84]. Put plainly, Agile is not a silver bullet. Projects still fail at approximately the same rate today as in 2001. It appears little has altered or evolved in this respect [84]. Additionally, Kropp's [120] agile study outcomes and argued that with respect to ASD methodologies what works for one team will not work on other.

Kerzner [111] argued that some IT projects fail because project managers are not monitoring the variables of schedule, cost, and scope. Shenhar and Dvir [188] illustrated that more than 60% of IT projects are not completed on time and within budget. The Standish Group (2010) wrote that 32% of the IT projects examined were successful and 68% of the IT projects were not successful; the failures were due failed and deserted projects. IT project success depends on various factors: having an IT project manager with effective leadership and decision-making. Traditionally, project success also depends on achieving the project in a given time, budget, and scope. However, there is a limited understanding of the lived experiences of those who experience the following workplace factors: cultural, functional, and organizational differences [67,157,169].

The purpose of this qualitative, phenomenological research study was to understand the lived experiences of IT managers with the workplace factors of cultural, functional, and organizational differences at global workplaces based in the United States. Up-to-date, real world communities are alike in many ways. These communities have internal factors comprised of communication, project management, accessibility of resources, project preparation, budget allotment, requirement and release management, and modification control process [36,65,67,157,169]. However, limited information is available regarding workplace factors that have an effect on IT projects [36,65,67, 157,169]. The scope of the study was within the United States and included virtual team professionals. The participants were drawn from members of managers from an international project management association. This study has implications for positive social change because organizations that understand workplace factors that effect the success of IT may develop strategies to improve project management and cost benefits leading to higher efficiency, profitability, and productivity.

Globalization has resulted in the demand for more efficient and competitive firms, meaning an increase in the use of ASDTs that span time zones, firm boundaries, and cultures [227]. ASDTs have the ability to transform a global enterprise by maximizing the use of all its resources to respond rapidly in a global marketplace. ASDTs can be organized independently of stakeholders' locations, gathering the best set of employee skills to be applied to the work at hand [227]. ASDTs can also be a source of costs savings, as evidenced by Volvo, which discovered a 50% decrease in its travel disbursements by designing ASDTs [227]. Such ASDTs are employing the latest SDMs, technologies, and processes [167]. But, IT projects failure and cancellation rates continue to remain high. For instance, within the last decade, researchers have indicated that the number IT / IS projects that fail and are never brought to achievement is significant [40,36,65,67,157,169,205]. Weiling and Ping [220] noted that for an IT project to reach a desired goal or objective, the project manager must possess effective decision-making, leadership, and project management skills.

The literature review in this chapter includes project management, difficulties in outsourcing, project success model, offshore software development, potential difficulties and suggested provisional solutions, ASDT software project risk management, review of current findings relating to ASDTs, ASDT workplace factors that shape IT project success, coping factors that shape IT project success, and a research method review. The chapter also contains details about several theories used to ascertain IT project success and research on workplace factors effecting IT project success.

2.1. Literature Review

2.1.1. Leadership

Servant Leadership is serving others while keeping them accountable—a powerful combination**.** Namely, Servant Leaders seek to develop and group people as an end goal of equal significance to outcomes. This needs a healthy capacity to correct, forgive, and move forward. Additionally, working to empower and serve the individuals one lead is the primary construct behind Servant Leadership. Challenging them to travel beyond, aim higher, innovate and have fun performing it needs leadership skills that are avenue beyond the traditional "Command and Control" style of management. A seldom-utilized but effective leadership style in the right climate, servant leadership aim on creating sure those working under them have their needs fulfilled. This style works best with employees or stakeholders who are well-motivated professionals who cognize their jobs well. The goal of the leader is to ensure sure that all personnel have the resources and the accompaniment required to perform their tasks well. The recommended leadership style for Scrum projects is Servant Leadership. Servant leaders have a deep dedication to development of people within their company. They take on the responsibleness of nurturing the professional, personal, and spiritual development of others [1a].

2.1.2. Project Manager

Researchers indicated managers with effective leadership skills help improve project success outcomes. Ginsburg [78], Chen [41], Chen and his colleagues [40], Quisenberry [167], Kocheria and Korrapati [116], and Zivick [227] noted that managers who possess effective skills could increase the likelihood of project success. Fulfilling customer requirements are also a good core indicator of project success [41, 204]. Standing and his colleagues [204] noted that in order to accomplish customer satisfaction, a manager must ensure that customer requirements do not change and that effective change management protocols and processes are built. The management team must also ensure job satisfaction among team members. High job satisfaction can lead to lower absenteeism and turnover and more dedication to ASDT project success [41,40,204]. Job satisfaction of project managers also is critical factor in successful project culmination. Standing and his colleagues noted that if a company is successful in designing an IT project, it might gain revenues, diminish life-cycle costs, and increase competitive advantage. Successful IT projects are made to produce economic value and competitive advantage [41]. Hence, organizational leaders need to realize this significant prior to initiate any new project for organizations sustainable development.

IT managers must possess project management skills to fulfill set goals and objectives, extradite caliber products, and maximize revenue while downplaying costs [41,40,204,78,167,227]. Successful ASDT projects can lead to prompt business gains, and sometimes long-term benefits like organizing the firm for future challenges, competitive market situations, and long-term development [41,40, 204, 78, 167,227]. In order for a project to succeed, process, instruments, and procedures must be built. In order to evaluate ASDT project success, project managers have to manage project efficiency, the effect on end users, business success, and long-term sustainable development [67]. Hence, organizational leaders who are measuring project success, they constantly need to manage projects and team members effectively.

2.1.3. Workplace Factors That Shape Agile Software Development Team Project Success

Huang [92] noted that as global IS development (ISD) practice has become more dominant and diversified; efforts are needed to address diversity issues. Distinct from traditional on-site ISD work, globally distributed ISD work is located within distinct, complex sociocultural settings, and is primarily carried out by ASDTs through virtual atmospheres accompanied by networking technologies. Hawk and Kaiser noted individual team members of ASDTs might have diverse national, professional, and firm backgrounds, which may shape their attitudes, behaviors, identities, and values (as cited in Huang, [92]). On one hand, Trauth and his colleagues noted that cultural difference could be used as a resource to increase creativity and flexibility, which might be beneficial for team operations (as cited in Huang, [92]). On the other hand, Moitra noted that cultural difference might become an impediment to establishing trust, sharing, and transferring cognition, and thus effect team operations in a negative manner (as cited in Huang[92]). Therefore, management needs to determine how to create a sense of cultural difference, understand its effect on the work practices of global information systems development, and determine how to effectively handle cross-cultural or cultural, functional, and organizational differences work practices.

Researchers indicated high trust in ASDTs help improve team overall performance or project success. Casey [35] noted that a high degree of trust within a firm improves creativity, efficiency, operation, productivity, and the overall outcomes accomplished. According to Anantatmula [10], in order to be competitive, firms are must design products and services quicker and cheaper in order to sustain competitive advantage in the worldwide marketplace. The global economy is effecting how managers handle their institutional knowledge; a departure from the traditional firm constructions has become essential. For example, sharing information has become essential for firms to handle international interactions and global projects effectively. The concept of a knowledge activist was created in ASDTs to encourage knowledge sharing among all knowledgeable stakeholders within a geographically dispersed, multinational, and multicultural organization. Kauppila and his colleagues [110] noted that various researchers have explored the challenges linked to knowledge sharing in the context of geographically dispersed organizations [128].

2.1.3.1. Cultural differences

Bass studied culture and leadership within countries, firms, and groups [67]. Bass stressed the importance of understanding cultural differences between countries. Hofstede stated that the success of the tasks of one individual in one culture is dependent upon understanding cultural differences, encompassing a variety of types of leadership styles [67]. The globalization of numerous firms and the gaining interdependency of nations make the understanding of culture and its effect on leadership significant. On a more virtual degree, these efforts offer a place to start understanding the cultural variances of leadership and the cultural settings that may shape individual leaders from distinct countries. Additionally, cultural and language differences are amplified in ASDTs [24]. Unintended, noninclusive behaviors rooted in cultural standards can be interpreted as intimidation or rudeness. Nurturing cultural understanding can enhance the success of ASDTs.

Furthermore, Espinosa, DeLone, and Lee [67] concluded that cultural differences were attributed to project

results by 13 participants, most of whom discussed negative effects on project operations in terms of budget and time overruns, higher cost / effort, and lower system caliber. Project team members from various countries had different views on issues and different way of conveying and resolving problems. Team members experienced troubles in empathizing with other members' behavior and operating as one team. A deficiency of understanding due to cultural gaps requires greater effort and time to resolve [67]. According to Espinosa and his colleagues, one participant indicated, "It takes a lot longer time to figure out certain things that would probably get resolved by a five minute phone call they dwell on the issue or problem for probably a week or two weeks" [67, p. 355].

Time separation remains a problem for ICTs [67]. To deal with time separation, teams need to design daily or weekly meetings, steady conference calls, and routine reporting of the project. Some teams should also rotate sending stakeholders to various locations and promote on-site meetings. This way, project team members may be able to prevent some of the problems that come from geographic distance and time separation. The negative effects of cultural differences on project operation appear in the original phase of projects, making it important to address cultural differences within teams early on in the project. Espinosa and his colleagues (2006) suggested that early recognition of cultural differences may help project team members prevent potential risks. As team members complete tasks with team members from other cultures, they become better able to deal with cultural diversity.

2.1.3.2. Functional differences

Buyl and his colleagues [31] suggested that the effect of top management team (TMT) functional differences on firm operation is unknown. Buyl and his colleagues examined the personalities of CEOs, postulating that the CEO's expertise and background characteristics effect the TMT functional difference and firm operation. Using a dataset of 33 Dutch and Belgian IT firms, Buyl and his colleagues examined the personality characteristics of three sets of CEOs (status as founder, functional background, and shared experience) with the other TMT members to determine the connection between TMT functional difference and firm operation. Buyl and his colleagues found that CEO and TMT characteristics do impact the functional expertise of distributed TMTs. Hence, these findings on CEO and TMT characteristics might also apply to ASDTs leaderships.

According to Espinosa and his colleagues, some problems in a global workplace may be attributed to functional differences that may subsist between sites when multiple areas of functional expertise are represented within a team. Espinosa and his colleagues noted that functional differences can shape team processes, which can effect the group's operation. In addition, Peters and Karren [162] noted that functional differences plays a role when team members are functionally distinct and geographically dispersed (virtual); and this diversity in terms of job function effects the degree of trust within the team. Peters and Karren found that both trust and functional differences had a direct effect on team member ratings. To effectively handle diversity, firms must understand the difference between functional and social diversities, and treat diversity differently in functional and innovative teams [196]. Hence, ASDTs leaders need to realize the diversity distinctly when managing these teams.

One of the advantages of ASDTs is that they are able to connect diverse experts from around the world in an effective way [174]. Therefore, in order for the ASDT to work at maximum effectiveness, the leader must promote the diversity of the team by establishing a culture of information sharing, cooperation, and functioning rooted in mutual respect and trust [174]. Leaders can also espouse diversity by promoting input from all team members, establishing a shared ASDT setting, and establishing a common language in order to ascertain that each team member defines terms in the same way.

2.1.3.3. Organizational differences

Researchers indicated organizational differences are significant when organizational leaderships use to establish alliances and connect with customers for promoting new market strategies. Smith and Barclay noted that building alliances to connect customers are among the new marketing strategies that mangers use for competitive advantage [146]. To be successful, these alliances require sales representative to form organizations to function effectively as selling partners. Smith and Barclay created a trust-rooted model to showcase effective selling partner strategies in the context of the computer industry. Smith and Barclay discovered that organizational differences were forecasters of three dimensions of commonly perceived attributes of trustworthiness. Organizational differences in goals and / or control systems and strategic horizons have an indirect impact on partnership satisfaction.

According to Espinosa and his colleagues, the gaining popularity of global outsourcing is effecting the use of teams that traverse organizational boundaries (OBs). Espinosa and his colleagues, [67] noted that distributed work groups frequently use teams comprised of multiple firms. According to Espinosa and his colleagues [67], differences in organizational affiliations can have the following outcomes: (a) diminish a shared sense of identity, and effect communication and operation effectiveness, and (b) a gain hidden costs because client organizations need to communicate work requirements to IT service providers and monitor contractual responsibilities.

2.1.4. Coping Factors That Shape Agile Software Development Team Project Success

2.1.4.1 Coordination: task programming and team communication

Researchers noted that projects coordination activities within ASDTs environment can be a challenge due to across multiple workplace factors. Coordination involves dispersing task activities, which may be difficult across multiple workplace factors [67]. Team members use two kinds of coordination mechanisms: team communication (TC) and task programming (TP). Coordination of repetitious and routine facets of the project can be programmed using mechanisms comprised of division of labor, plans, project controls and specifications, schedules, and tools. But less routine facets of the task can be most effectively aligned through communication, which can be asynchronous (e.g., electronic mail, shared databases) or synchronous (e.g., F2F, instant messaging, telephone). When ASDT members are in close proximity, they frequently gather spontaneously and coordinate their tasks informally [67]. As workplace factors impair communication among members, TP mechanisms can assist ASDT members in ensuring effective communication.

2.1.4.2. Team communication

Casey [35] noted that effective communication (EC) is a crucial process in every organization and is a required component for successful, globally distributed software development. Trust, fear, and motivation directly effect the degree, content, and effectiveness of communication. Stakeholders have to be motivated to use the communication software, which is furnished. The communication, which takes place, must be effective to fulfill the demands of the teams and projects [35]. Hence, effective members' communication skills are also important to ASDTs overall project outcome.

Communication issues for ASDTs include both the tools or technologies for communication and the rules of participant. Both are vital for ASDT success and what functions well for F2F teams is usually not effective for ASDTs. Researchers have discovered different outcomes as to whether communication tools like videoconferencing and e-mail are beneficial or ineffective for ASDTs. Shared electronic workplaces such as websites on an intranet are preferred communication tools for ASDTs [130]. Rules of participation for ASDTs includes building upfront the guidelines that team members will and will not use when communication with each other. Rules that are taken for granted in a F2F situation, like not recognizing each member at the beginning of a meeting, might need to be created explicitly for ASDTs.

With regards to the avenue to communicate to remote team members, researchers discovered that onsite engineers whose jobs sent offshore can be a challenge. Casey [35] studied onsite engineers whose job was sent offsite. Casey found that these engineers communicated with their offsite stakeholders in a limited way. As a consequence, communication was kept to a minimum, phone calls were not answered, e-mails furnished a limited amount of data, and on occasions were not replied to and queries stayed unanswered [35]. When direct communication occurred, the discourse was crisp and, on occasions, aggressive. This resulted in inexperienced team members in an offsite location who lacked the communication required to execute their job successfully [35]. It became apparent that online communication was being employed as a means to narrow and control the amount and quality of data, which were shared. Communication was a barrier in the development of personal associations and trust by limiting any direct interaction [35]. It can be easy to resent and dislike someone who is not known personally, especially when they are perceived as a threat to an individuals' future [35]. Casey further noted that in the offshore / nearshore software development study, communication was employed as a weapon with which was used to attack remote team members. This was mainly accomplished through the misuse of e-mail. Copying others on e-mail is not a problem [35]. Rather in this instance, it was the malicious use of e-mail by virtual team members at both locations, which made it become a problem.

2.1.4.3. Team knowledge or cognition

Team knowledge can be a great accompaniment to traditional coordination mechanisms [67]. Espinosa and his colleagues [67] examined three types of team cognition: building trust, shared cognition, and cognition and cognition management. Espinosa and his colleagues found that sharing knowledge has a positive effect on IT project results. Shared knowledge offers a mutual ground for efficient communication with less complex messages and a mutual cognition base that assists team members tap into expert cognition sources within the

team [67]. Hence, shared knowledge also help team overall performance.

2.1.4.4. Building trust

In a ASDTs project environment, establishing strong trust at the beginning with all team members could have positive effect on future team project performances and organizations operating efficiency. According to Casey [35], trust in the organizational setting is characterized as the reciprocal faith in other stakeholders' conduct. Casey stated, "In short we give what we get: trust begets trust, distrust begets distrust" (p. 52). The importance of trust has become increasingly acknowledged as a vital component in the successful operation of organizations and in business, professional, and employment relationships. Trust is obtained through the successful cooperation amongst stakeholders within and between organizations. Trust is necessary for the operation of an organization and the units functioning within it. Casey noted that high level of trust within a business firm improves creativity, efficiency, operation, productivity, and the overall outcomes accomplished.

In ASDTs, trust must be built through other avenues rather than through traditional F2F communication. Brandt, England, and Ward [24] stated that there are three elements of trust (ability, integrity, and benevolence) that must be present ASDT. Without trust, effective connections between team members cannot be established in the ASDT; therefore, it is vital to the success of an ASDT that the leader establishes the climate that is conducive to trust [174]. A leader can establish trust in an ASDT by having an initial in-person meeting with the team [174]. However, if this is not possible, then the leader should encourage members in the ASDT to post a picture of themselves and their biographical data, in order for each individual to see the human face behind the user name [174]. Other ways that leaders can create trust in ASDTs include designating tasks and promoting open and honest communication by establishing a safe, noncritical climate [174]. ASDT managers can also nurture trust by meeting the goals created by the ASDT constituents, appearing on credible and legitimate with followers, and ensuring that each member of the ASDT is performing via a private chat.

In software development teams, trust takes time to establish between team members. Distance makes it more difficult to develop trust between remote colleagues [35]. Despite this, the development of trust is important for the success of an ASDT-based software development [35]. Casey [35] stated, (a) Webs of technology and trust link ASDTs, and (b) Trust is pivotal in an ASDT to alleviate the high level of mistrust indigenous to the global and technologically rooted climate.

Cooperation between team members is necessary for the successful operation of ASDTs. The term teameness has been characterized as the ability of stakeholders to collectively collaborate and work effectively as a team [35]. Carmel stated that the loss of teamness was one of the five negative centrifugal forces, which effect outcomes for ASDT operation (as cited in Casey, [35]). Distance has a negative effect on the degree of teamness between remote colleagues [35]; it is not easy to successfully incorporate geographically remote and culturally various individuals or groups into a single team.

Trust is an important element of numerous interactions, encompassing virtual and F2F teams. Members of high-operation teams have high degrees of trust in one another [179]. Developing trust in ASDTs, who consist of

members with little history of working and sometimes few opportunities of working together again, is a challenge [179]. Jarvenpaa and Leidner [110] examined the growth of trust in temporary ASDTs. Jarvenpaa and Leidner discovered that with short deadlines and no F2F time to build trust, the team members relied on trust being developed through from other avenues. Trust-building actions like fulfilling deadlines and communication effectively assisted in strengthening initial feelings of trust.

An ASDT is a network where team members from different cultures are temporarily assembled together for a mission. Chang, Chuang, and Chao [37] proposed a general model of ASDTs to investigate how communication caliber, cultural adaptation, and trust impact the performance of ASDTs and their interaction with each other. Four global virtual team (GVT) members were interviewed in order to determine how GVTs work. Chang and his colleagues found that communication caliber, cultural adaptation, and trust have positive effects on the performance of GVTs. For GVTs, team leadership should be cognizant of cultural differences and project issues within teams.

Mockaitis, Rose, and Zettinig [141] studied the perceptions of members of 43 culturally diverse GVTs, with regard to team results and processes. Employing a student-rooted sample, Mockaitis and his colleagues examined the connection between global GVT members' collectivistic and individualistic orientations and their measurements of trust, communication and information sharing, interdependence, and dispute during team tasks. Mockaitis and his colleagues advised that a collectivist orientation is linked with global ASDT processes and cultural differences are not hidden by virtual communication.

2.1.4.5. Knowledge and knowledge management

Researchers indicated that to effectively deal with rivalry, organizations must find avenues to quickly develop products and services with a lower cost to remain competitive advantage. According to Anantatmula [10], in order to successfully deal with rivalry, firms are must design products and services quicker and cheaper in order to sustain competitive advantage. The global economy is effecting the ability of firms to handle their institutional knowledge. For example, sharing information has become essential for firms to handle international projects efficiently [10]. In the process, firms share knowledge with their strategic partners globally. In addition, worldwide projects provide opportunities to acquire cognition from each other and increase their cognition base [10]. Further, operating conditions and communication systems of ASDTs are connected to a person's lack of willingness to share information. Compounded with these challenges, firms encounter other challenges of cultural diversity as obstacles to effective knowledge management in global projects. Knowledge sharing and management are vital for firms to become and stay competitive [10]. However, due to international interactions and global projects, numerous firms are obligated to share their institutional knowledge with partnering firms, thereby threatening their competitive advantage.

According to Anantatmula [10], knowledge management is a systematic method to using information systems, business processes, best praxis, and culture to design and share knowledge within a firm. Innovation and transfer of knowledge are two facets of knowledge management. Knowledge innovation and transfer can occur only when more than one individual is involved. With regard to innovation, knowledge management includes

two activities: (a) preserving and employing existing knowledge and (b) producing new knowledge for effective use. Existing knowledge is comprised of both tacit and explicit knowledge. Producing new knowledge involves the interaction of stakeholders within the organization.

2.1.4.6. Knowledge sharing

Kauppila, Rajala, and Jyrämä [107] analyzed the key concerns in knowledge management, including the challenges of nurturing knowledge sharing by encouraging the interaction of stakeholders within an organization. Kauppila and his colleagues noted that knowledge management scholars have underscored the need for communities that enable knowledge sharing. A knowledge activist in an ASDT is charged with encouraging knowledge sharing among all knowledgeable stakeholders within a geographically dispersed, multinational, and multicultural organization. Various researchers have explored the challenges linked to knowledge sharing in the context of geographically dispersed organizations [67,128]. Kauppila and his colleagues concluded that knowledge sharing includes a reliance on cohesive social ties, dialogic practices, F2F encounters, and shared norms, and trust. However, the physical distance between stakeholders diminishes the number of chances for F2F interaction. According to Kauppila and his colleagues, the absence of F2F interaction leads to diminished trust and cohesion among stakeholders and thus compromises knowledge sharing. This issue is complicated by the fact, in addition to that geographical impediments; multinational firms must also reduce cultural and functional impediments to their internal knowledge sharing.

ASDTs are one solution to the challenges facing knowledge sharing in multinational companies. Kauppila and his colleagues [107] argued that processes that support knowledge synergy and shared understanding make ASDTs a potentially powerful new organizational form. According to Kauppila and his colleagues, challenges in handling GVTs and the practices of ASDT leaders have been addressed. Kauppila and his colleagues [107] emphasized that work can now be conducted anytime, anywhere, and either in real space or through technology, thus overcoming key challenges faced by global organizations. Martins and his colleagues stated that as technology has improved and collaborative software has been developed, ASDTs, whose stakeholders are spread across diverse physical geographic locations, have become increasingly prominent (as cited in [107]).

3. Research Method

The purpose of this qualitative, phenomenological research study was to understand workplace factors of cultural, functional, and organizational differences that effect the success of ASDT projects. I explored which arbitrating task process variables heighten the likelihood of success, given the presence of these workplace factors. A qualitative research approach is appropriate for the study because qualitative inquirers depict and explicate research and interpret or establish theories [45]. The workplace factors included in the study are those factors leading to ASDT project success, such as cultural, functional, and organizational differences. The study included 10 IT managers based in the United States who had successful ASDT experiences. The 10 ASDT managers were sent a set of interview questions containing open-ended questions. Researchers employ a qualitative phenomenological research design to reveal the characteristics of a phenomenon [45]. A qualitative phenomenological research design is also used when inquirers want to establish theories, best practices, and

offer insights on assembled data [26].

3.1. Research Design and Rationale

3.1.1 Research Method

Researcher noted that mixed method research demand more time during data collection and data analysis process. Plano Clark [164] noted that the mixed methods form of research requires an inquirer to do extensive data collection, and the process of analyzing numerical data and text is time intensive. Mixed method designs also include a deficiency of balance in terms of how the quantitative and qualitative strategies and research are designed [30]. The deficiency of balance can lead to a study intemperately aimed on one of the research designs and can lead to the supporting facet of the research being deserted, which causes limited illumination [30]. In addition, mixed methods research is not appropriate for this study because it combines quantitative and qualitative research approaches and uses them in tandem to improve the study [71].

Quantitative research is generalized and includes numbers to test hypotheses. Quantitative research is deductive as inquirers employ the method to test theories [195]. Quantitative research includes postpositivist worldviews that focus on empirical observation and evidence [161] and comes to definitive conclusions using statistical evidence [195]. Quantitative researchers do not engage subjective facets of phenomena because they test theoretical conclusions. In addition, Borrego and his colleagues noted that a quantitative research approach requires a bigger population independent of circumstance, which means that the study should have random sampling [172]. A quantitative research approach was not appropriate for the study because researchers who employ quantitative research approaches use particular and narrow questions, collect numerical information from participants, and analyze the numbers employing statistics [161].

A qualitative research approach was a more appropriate choice than a quantitative research approach because of the subjective nature of the research study. The study consisted of interviews employing a questionnaire consisting of open-ended questions to collect information from the participants. The study included Moustakas' [143] modified van Kaam method and the Nvivo Qualitative Research Software Package (NQRSP) to analyze the data. A quantitative method was not applicable for this study because quantitative researchers do not collect information to distinguish emerging themes and patterns [172].

A qualitative method was appropriate for this study. Borrego and his colleagues noted that a qualitative researcher looks to explain the phenomenon of a particular event, permitting a reader to create links between the study and his or her own circumstance [172]. Schilling [185] noted that qualitative approaches are optimal for assembling a more in- depth understanding of individuals' purviews, lived experiences, and perceptions. Qualitative approaches are inductive because inquirers assemble data from participants to depict and explicate research and interpret or establish theories [45]. Adams and his colleagues [1] and Creswell noted that qualitative inquiry is effective in explaining ideas about a particular phenomenon [172]. Additionally, Sherrod (2006) noted that qualitative inquiry approaches are effective for demonstrating study participants' perceptions to understand a phenomenon. A qualitative research method is also proper when researchers need to know more about the

particular construction of occurrences versus the general persona and overall distribution of the occurrences [201].

A qualitative research approach was appropriate for this study because I wished to analyze the life experiences and perceptions of a sample of ASDT managers in global workplaces based in the United States who experienced an ASDT project success. The chosen sample size, which was 10 participants, was also conducive to a qualitative research approach. Sherrod [190] noted that qualitative inquiry methods normally have smaller sample sizes (e.g., 100 participants or less) than other research approaches. A qualitative research approach helped me achieve the goal of the study, which was to understand and depict the ASDT workplace factors that lead to IT project success.

3.1.2. Research Questions

The purpose of this study was to understand the workplace factors that effect the success of ASDT projects. The three research questions were as follows. What are the lived experiences of managers regarding the effects of the workplace factors of cultural, functional, and organizational differences on ASDT project success? What are the lived experiences of managers regarding arbitrating task process variables (e.g., coordination, task programming and team communication, and knowledge) on the enhancement of the likelihood of success, given the presence of these workplace factors? What are the lived experiences of managers regarding a style that is best suited for managing virtual team? These three research questions were then functionally composed into the nine subquestions (see Appendix C & D).

3.2. Methodology

3.2.1. Population

The population for the study included ASDT managers based in the United States with direct involvement in ASDT. The inclusion criteria for selecting participants included the volunteers' willingness to participate in the study, participants' prior and current cognition of ASDT processes, and the participants' willingness to share lived experiences and perceptions about workplace factors. Knapik (2006) noted that participants included in qualitative inquiry studies generally have comprehensive experience and cognition about their work environment. In addition, participants normally want to offer high-quality and accurate data based on experience [118]. The eligible study participants received an e-mail letter of invitation or invitation letter requesting to participation (see Appendix A) briefly explaining the research study and providing criteria for inclusion.

3.2.2. Data Collection

Researcher indicated that qualitative researchers use more than one steps when assembling research data. Patton [161] claimed that there are five steps involved in the process of gathering qualitative data. Qualitative studies require obtaining participants, attaining access, deciding on the types of information to collect, using data collection forms, and administrating the study in an ethical fashion [161]. In other words, the data collection

process is comprised of collecting data using forms with questions to evoke responses from participants, gathering text, and collecting data from a small number of participants.

An e-mail questionnaire was used to collect the research questionnaire data. The participants were required to answer the same questions. The questionnaire was used to gather demographic information (e.g., age, gender, number of year experience with collocated and virtual team project, and current industry), details about project success, cultural, functional, and organizational differences.

3.2.2.1. Interviews

Interviews with open-ended questions were used to evoke responses from participants, exploring the workplace factors leading to ASDT project success. The workplace factors the participants believe are most highly valued at ensuring ASDT project success are documented. Therefore, the participants' responses helped me in answering the research questions of the study.

3.2.3. Instrumentation and Material

An e-mail questionnaire interview format was the vehicle employed to collect information from the study participants. An e-mail questionnaire interview enables an inquirer to implement the content and analyze the outcomes objectively. The study questions (see Appendix C&D) were based on what researchers advised as workplace factors that could effect ASDT project success.

3.2.4. Pilot Study

Singleton and Straits [197] noted that during research, there is a possibility of participants misinterpreting interview questions. Pilot testing both the interview questions and the instructions minimizes this problem. Three individuals were be asked to participate in the pilot test that meet the same criteria as the primary study participants and these participants would not be included in the primary study. I followed up with the pilot participants after the pilot study to obtain feedback on the questions and instructions to obtain any recommendations for further development and enhancement. I also asked if the questions are clear and easy to understand. Feedback and recommendations from the pilot study participants were not essential and were not implemented in the primary study.

4. Results

The purpose of this qualitative, phenomenological research study was to understand the lived experiences of ASDT managers with the workplace factors of cultural, functional, and organizational differences at global workplaces based in the United States. The lived experiences and perceptions of 10 ASDT managers who experienced an ASDT processes were explored to analyze the workplace factors leading to project success (e.g., resulting in improved PM, higher productivity, improved cost benefits, greater efficiency, and profitability) to assist in the improvement of future ASDT projects. I used the data assembled from the interviews to answer the following three research questions: What are the lived experiences of managers regarding the effects of the

workplace factors of cultural, functional, and organizational differences on ASDT project success? What are the lived experiences of managers regarding arbitrating task process variables (e.g., coordination, task programming and team communication, and knowledge) on the enhancement of the likelihood of success, given the presence of these workplace factors? What are the lived experiences of managers regarding a style that is best suited for managing ASDT team?

4.1. Pilot Study

Three managers were included in the pilot test (see Appendix E), which consisted of open-ended questions supporting the research questions on January 2016. The managers chosen for the pilot test were knowledgeable of ASDT processes and were current or had prior experience in managing or leading an ASDT. The results of the pilot test required no modifications to either the instructions or the interview questions. The participants responded to all nine questions appropriately with no indications of ambiguity.

4.2. Demographics

The intent of the study was to obtain a better understanding of the following organizational workplace factors: cultural, functional, and organizational differences. The participants came from diverse backgrounds and were all either members of an International PM Association or Agile Project Management Group. Seven (see Table 1) out of 10 (70%) study participants work in the IT industry. Two out of 10 (20%) participants worked in manufacturing. One out of 10 (10%) participants worked in the department of defense. By looking at these participant pools, I was able to seize the views of tenured ASDT managers from a variety of backgrounds. Table 1 presents the demographic information offered by each participant.

Table 1: Participant Demographic Information

Participant	Gender	Age group	Virtual Team experience (years)	Collocated team experience (years)	Current industry
SP1	M	50-59	1-5	26+	IT
SP2	M	30-39	6-10	6-10	IT
SP3	M	30-39	11-15	11-15	IT
SP4	M	40-49	6-10	11-15	IT
SP5	M	40-49	6-10	16-20	IT
SP6	M	40-49	6-10	11-15	Manufacturing
SP7	F	40-49	6-10	11-15	Manufacturing
SP8	F	40-49	6-10	11-15	IT
SP9	F	50-59	11-15	26+	IT
SP10	M	50-59	16-20	26+	DOD

4.3. Data Collection

4.3.1. Participants

Participant selection using purposeful sampling began on January 20, 2016 and ended on Febuary 20, 2016. Letter of invitations (see Appendix A), a participant informed consent form (see Appendix B), and the interview questions (see Appendix C&D) were e-mailed to 40+ participants employed at global workplaces based in the United States. After the 30-day period, a total of 10 project managers and / or leaders at global workplaces based in the United States took part in an interview using e-mail as part of my interviewing protocol. They answered a series of nine interview questions, as noted in my data collection instrument (see Appendix C&D). Table 1 shows a demographical overview of the study participants.

The data collection process used in the study to gather in-depth responses from participants had no variations from what I discussed in Chapter 3 to the actual implementation. I obtained the participants' e-mail addresses during the initial contact via Linked In discussion postings and LinkedIn International PM Association and group discussion postings. I did not face any unusual circumstances during the data collection process, such as any technical difficulties with using e-mail. All participants were knowledgeable of e-mail functionalities. The interview protocol and methodology used to assemble the data from participants was effective and I did not face any issues that changed or hindered the data collection process in any manner.

4.4. Study Results

4.4.1. Responses

The completed interview questionnaires (see Appendix C&D) were the collected data. The synopses of responses were the result of Moustakas' [143] modified version of van Kaam's method of phenomenological data analysis. Additionally, the NQRSP was used to distinguish common themes and patterns among the study participants' responses. The open-ended questions containing the questionnaire (see Appendix C&D) were the result of the cognition gained from the literature review. Research articles on workplace factors leading to ASDT project success [67,146,169], PMI [199], and ASDT [167] were important in developing the nine open-ended questions in the questionnaire.

4.4.2. Agile Software Development Teams

More and more organizations are turning into agile software development team to leverage ICTs, development methodologies, and team members' diverse expertise skills around the world. Thus, project leaders and team members with effective decision-making and project management skills have an effect on project outcomes. Additionally, project leaders and team members need to be culturally sensitive as well as be trained on different cultures in order to work effectively with their team members locally and remotely. This in turn helps minimize miscommunication among team members as well as optimized team overall performance, especially during team meetings and teleconferences meetings. Furthermore, leadership with effective decision-making and project management skills as well as appropriate leadership styles usage also effect project outcomes [117]. The

following nine interview questions and findings are as follows.

Question 1

Question 1 was "What is your lived experience on an agile software development team?"

As shown in Table 2, 9 out of the 10 (90%) study participants believe agile software development members bring a broader array of knowledge and experience, self-manage, and reduce time to market. Participants 1, 2, 3, 4, 5, 6, 7, and 9 showed similar thoughts based on the responses. For example, Participant 8 stated, "Agile teams are created to utilize broader array of knowledge and experience from team members across the globe to leverage technology and help reduce time to market." Eight out of 10 (80%) study participants think agile team helps organizations leverage technologies and tap into a diverse knowledge and skill sets. Participants 1, 2, 3, 4, 6, 7, 8, and 9 showed similar thoughts based on the responses. For example, Participant 5 stated, "Agile teams built to utilize a broader array of knowledge and experience and to my organization leverage technologies and tap into a diverse knowledge and skill sets from members around the world." Seven out of 10 (70%) study participants believe agile software development members are creative and they have high degree of initiative and adaptability. Participants 1, 2, 3, 4, 5, 6, and 7 showed similar thoughts based on the responses. For example, Participant 8 stated, "My agile software development team members are created to use their creativity and they have high degree of initiative and adaptability since annually we supported over 15k customers internally and externally." Six out of 10 (60%) study participants believe agile software development team needs to develop trust, team building, and flexible work schedule. Participants 2, 3, 4, 5, and 6 showed similar thoughts based on the responses. For example, Participant 1 stated, "Lack of trust result siloes of knowledge and unwillingness to cooperate."

Table 2: Responses to Question 1 (N = 10)

Prevalent theme	Frequency	%
Broader array of knowledge and experience, self-manage, and reduce time to market	9	90%
Leverage technologies and tap into a diverse knowledge and skill sets	8	80%
Creativity and have high degree of initiative & adaptability	7	70%
Develop trust, team building, and flexible work schedule	6	60%

4.4.3 Workplace Factors Shape Agile Software Development Team Project Outcomes

Internal factors consisted of communication, project management, accessibility of resources, project preparation, budget allotment, requirement and release management, and modification control process [41,40,204, 78, 167,227] have significant effect on project outcomes. Additionally, project managers with effective decision-making and project management skills as well as appropriate leadership styles, depends on the circumstance also effects project outcomes [117]. Furthermore, workplace factors such as cultural, functional and organization differences effect project outcomes [67].

Question 2. Question 2 was "What is your lived experience on how agile software development team cultural differences could effect agile software development team project success?"

As shown in Table 3, nine out of the 20 (45%) study participants believe agile software development members need to be aware that culture is critical to agile software development team project success. Participants 2-8 and 10 showed similar thoughts based on the responses. For example, Participant 1 stated, "There are cultures around the world that are more reluctant to speak up or are less comfortable with conflict. These are elements of creating a non-hierarchical team, where people are free to communicate as needed. Culture is critical. " Eight out of the 10 (80%) study participants believe agile software development team is created to leverage diverse knowledge and skills and improve decision making. Participants 1-6, and 10 showed similar thoughts based on the responses. For example, Participant 7 stated, "Our software development team is created to leverage diverse knowledge and skill sets among team members in order to help them daily improve their decision making process." Seven out of the 10 (70%) study participants believe agile software development team needs to appreciate other cultures help create a more trusted working environment. Participants 2, 3, 4, 5, 7, and 8 showed similar thoughts based on the responses. For example, Participant 9 stated, "Cultural differences among members help my agile team to leverage diverse knowledge and skills for sustainable and development as well as help improve our agile team decision making. Additionally, team members need to learn and appreciate other culture in order to create a more trusted working environment." Six out of the 10 (60%) study participants believe agile team members in some cultures are more reluctant to speak up or are less comfortable with conflict.

Table 3: Responses to Question 2 (N = 20)

Prevalent theme	Frequency	%
Culture is critical to agile team software development project success	9	90%
Leverage diverse knowledge and skills and improve decision making process	8	80%
Appreciate other cultures help create a more trusted working environment	7	70%
Some cultures are more reluctant to speak up or are less comfortable with conflict	6	60%
Without organizational support and commitment, ASDT can fall back against traditional timeline & milestones	5	50%
Teams need to be comfortable with direct and honest communications	4	40%

Participants 2-6 showed similar thoughts based on the responses. For example, Participant 1 stated, "There are cultures around the world that are more reluctant to speak up or are less comfortable with conflict." Five out of the 10 (50%) study participants believe agile team members without organizational support and commitment, ASDT can fall back against traditional timeline & milestones. Participants 3, 4, 5, and 8 showed similar thoughts based on the responses. For example, Participant 2 stated, "Without organizational support and commitment to the agile methodology, teams can become isolated within the organization and fall backwards to development against a traditional timeline and milestones." Four out of the 10 (40%) study participants believe ASDTs need to be comfortable with direct and honest communications. Participants 4, 5, and 8 showed similar thoughts based on the responses. For example, Participant 3 stated, "Teams need to be comfortable with direct and honest communications. Cultures that prioritise indirect and face saving communication seem to struggle

with agile."

Question 3. Question 3 was "What is your lived experience on how agile software development team functional differences (e.g., when more than one area of functional expertise is represented within a team) could effect IT project success or related to team-rated performance?"

As shown in Table 4, nine out of the 10 (65%) study participants believe that functional differences help agile software development team to leverage technical expertise and skills and foster team effectiveness. Participants 1-8 showed similar thoughts based on the responses. For example, Participant 9 stated, "You have to have a team with different skills to satisfy and deliver a project. Team leader has to search the right person for the right project in order to succeed. Thus, functional differences help agile software development team to leverage technical expertise and skills and foster team effectiveness." Eight out of the 10 (70%) study participants believe that functional differences offer better dynamic and reduce development cycle. Participants 2-7, and 10 showed similar thoughts based on the responses. For example, Participant 8 stated, "I believe that when more than one functional expertise is within a group this in turn aids to better team performance.

Table 4: Responses to Question 3 (N = 20)

Prevalent theme	Frequency	%
Leverage technical expertise and skills and foster team effectiveness	9	90
Offer better dynamic and help reduce development cycle	8	80
Boost team overall performance and outcome	7	70
Right expertise at table is critical to project success	6	60
Teams need to be cross-functional implies to every field of knowledge needed for the team to progress needs to be present on the team	5	50

Thus, functional differences within agile software development team offer better dynamic and aid to reduce development cycle. " Seven out of the 10 (70%) study participants believe that functional differences help boost team overall performance and outcome. Participants 1-6 showed similar thoughts based on the responses. For example, Participant 7 stated, "I believe that functional differences benefit or boost the performances of the agile team due to IT project's complexities." Six out of the 10 (35%) study participants believed that functional differences or having the right expertise or people at the table are critical to project success. Participants 3,4,5, 6, and 7 showed similar thoughts based on the responses. For example, Participant 10 stated, "Having the right expertise or team members at the table, no matter if they operate virtually or operate in the same building, is critical to its success." Five out of the 10 (50%) study participants believe that functional differences teams need to be cross-functional implies to every field of knowledge needed for the team to progress needs to be present on the team. Participants 2, 4, 5, and 9 showed similar thoughts based on the responses. For example, Participant 1 stated, "Teams need to be cross-functional, meaning that every field of knowledge needed for the team to progress needs to be present on the team. Additionally, team members need to cross-train each other in their specialties, to avoid overproducing the wrong kind of work item or waiting on another specialty to finish before work can continue."

Question 4. Question 4 was "What is your lived experience on how agile software development team organizational differences (e.g., multiple vendors increase project complexity as an outcome of different and sometimes conflicting sets of goals and success measures) could effect IT project success?"

As shown in Table 6, nine out of the 10 (90%) study participants believe that organization differences team needs to align on outcome, work toward common goal, and same management structure. Participants 2-9 showed similar thoughts based on the responses. For example, Participant 1 stated, "Team members all need to be working towards the same goal, which is enhanced by having them in the same management structure. If teams serve multiple managers, then they will have different goals and that will cause conflicts and on the team." Eight out of the 10 (80%) study participants believe that agile software development team working with multiple vendors provide competition that leads to improve project performance. Participants 2-8 showed similar thoughts based on the responses. For example, Participant 9 stated, "Vendors are vendors have an agenda to achieve and as manager, I need to make sure that their goals in alignment priority and goals**.** My experiences with vendors they aid to provide completion that leads to improve project performance." Seven out of the 10 (70%) study participants believe that agile software development teams need to coach vendors and outside teams (affect sprint deliverable) on ASD cycle. Participants 3-8 showed similar thoughts based on the responses. For example, Participant 2 stated, "Vendors and outside teams that can affect the sprint deliverable have to be coached on the agile development cycle as well. Agile teams can be demanding in their request give their sprint cycles and release horizons." Six out of the 10 (60%) study participants believe that agile software development teams when operating with multiple vendors leaders need to ensure vendors processes or tools are uniform, alignment, and thoroughly tested. Participants 3-7 showed similar thoughts based on the responses. Participant 8 stated, "As a project manager, I need to ensure vendors processes or tools are uniform, alignment, and thoroughly tested."

Table 6: Responses to Question 4 (N = 20)

Prevalent theme	Frequency	%
Align on outcome, work toward common goal, and same management structure	9	90
Provide competition that leads to improve project performance	8	80
Coach vendors and outside teams (affect sprint deliverable) on ASD cycle	7	70
Vendors processes or tools are uniform, alignment, and thoroughly tested	6	60

4.4.4 Coping Variables Help Shape Project Outcomes

Researchers noted that leaderships with effective project management and appropriate leadership styles use have significant effect on project results. Leadership with effective decision making and project management skills have significant impact on project outcomes as well as appropriate leadership styles usage depend circumstances [117]. Additionally, workplace factors such as cultural, functional and organization differences have impact on project outcomes [67]. Furthermore, coping variables such as ASDT coordination (e.g., task programming and team communication), trust, and knowledge sharing and knowledge management also help shape workplace factors outcomes [67].

Question 5. Question 5 was "What is your lived experience on how effective agile software development team coordination (e.g., task programming and team communication) could enhance the chance of success of IT projects success?"

As shown in Table 7, nine out of the 10 (90%) study participants believe that effective team coordination help achieve more tasks in short time frame. Participants 1-8 showed similar thoughts based on the responses. Participant 9 stated, "I personal believe that effective team coordination helps us to accomplish more task in short time frame." Eight out of the 10 (80%) study participants believe that effective team coordination Scrum Masters and Product Owners need to communicate regularly. Participants 3-10 showed similar thoughts based on the responses. Participant 2 stated, "With agile team coordination it is essential that the scrum masters and product owners from the respective teams regularly communicate." Seven out of the 10 (70%) study participants believe that effective team coordination Scrum Masters and Product Owners outcomes need to share with the team through the grooming of the backlog. Participants 3-9 showed similar thoughts based on the responses. Participant 2 stated, "The results of these communication sessions should be shared with the team through the grooming of the backlog." Six out of the 10 (60%) study participants indicated that agile software development teams that are distributed can be successful, but need greater investment in ICTs. Participants 4-9 showed similar thoughts based on the responses. Participant 3 stated, "Colocation is important to team success. Teams that are distributed can be successful, but need greater investment in communication technologies." Five out of the 10 (50%) study participants indicated that agile software development teams need to setup distributed teams in the same timezone. Participants 4-8 showed similar thoughts based on the responses. Participant 3 stated, "It also helps to setup distributed teams in the same timezone."

Table 7: Responses to Question 5 (N = 20)

Prevalent theme	Frequency	%
Accomplish more tasks in short time frame	9	90
Scrum Masters and Product Owners need to communicate regularly	8	80
Scrum Masters and Product Owners outcomes need to share with the team through the grooming of the backlog	7	70
Teams that are distributed can be successful, but need greater investment in ICTs	6	60
Setup distributed teams in the same time zone	5	50

Question 6. Question 6 was "What is your lived experience on how effective agile software development team trust could heighten the likelihood of agile project success?"

As shown in Table 8, nine out of the 10 (90%) study participants believe that agile software development teams need to work through trust issues early in a project and get to a point where there is trust across everyone on the teams. Participants 2-9 showed similar thoughts based on the responses. Participant 1 stated, "Teams need to work through trust issues early in a project and get to a point where there is trust across everyone on the teams. This is especially necessary to create an environment where teams can improve during their retrospectives. " Eight out of the 10 (80%) study participants believe that agile software development team need coaching and adhering to the agile ceremonies helps to build trust through communication and dissemination of information.

Participants 3-9 showed similar thoughts based on the responses. Participant 2 stated, "Assigning teams is not ideal in the agile, however it does occur. Coaching and adhering to the agile ceremonies helps to build trust through communication and dissemination of information." Seven out of the 10 (70%) study participants believe that agile software development team builds trust around people who they have confidence in their work or have worked with in the past. Participants 3-8 showed similar thoughts based on the responses. Participant 2 stated, "Ideally teams should be self-organizing. This self-organization inherently builds trust as teams will usually organize themselves around people who they have confidence in their work or have worked with in the past." Six out of the 10 (60%) study participants believe that trust is needed between peers, between leaders and teams, and between client and vendor. Participants 4-8 showed similar thoughts based on the responses. Participant 3 stated, "Agile is predicated on trust. Trust between peers, between leaders and teams and between client and vendor. Without trust (.e.g requiring strict contracts) agile will fail." Five out of the 10 (50%) study participants believe that lack of trust result siloes of knowledge and unwillingness to cooperate. Participants 4-7 showed similar thoughts based on the responses. Participant 1 stated, "Lack of trust shows up as siloes of knowledge and unwillingness to cooperate.**"**

Table 8: Responses to Question 6 (N = 10)

Prevalent theme	Frequency	%
Teams need to work through trust issues early in a project and get to a point where there is trust across everyone on the teams	9	90
Coaching and adhering to the agile ceremonies helps to build trust through communication & dissemination of information	8	80
Team builds trust around people who they have confidence in their work or have worked with in the past	7	70
Trust is needed between peers, between leaders and teams, and between client and vendor	6	60
Lack of trust result siloes of knowledge and unwillingness to cooperate	5	50

Question 7. Question 7 was "What is your lived experience on how effective agile software development team knowledge sharing could heighten the chance of agile projects success?"

Table 9: Responses to Question 7 (N = 10)

Prevalent theme	Frequency	%
All knowledge must be shared	9	90
Siloes cause delays in the flow of work through a team and reduce the effectiveness of that team	8	80
Teams should pair program all features result in knowledge is transparency to the entire team	7	70
Communicate regularly and daily stand up sets the stage for the day with the commitments ASDT members	6	60
Daily stand up should take place before development starts	5	50
Pair programming and other skills sharing techniques can greatly improve the quality of teams work	4	40

As shown in Table 9, nine out of the 10 (90%) study participants believe that agile software development team all knowledge must be shared. Participants 2-8 showed similar thoughts based on the responses. Participant 1 stated, "All knowledge must be shared. Any siloes cause delays in the flow of work through a team and reduce

the effectiveness of that team." Eight out of the 10 (80%) study participants believe that agile software development team siloes cause delays in the flow of work through a team and reduce the effectiveness of that team. Participants 2-7 showed similar thoughts based on the responses. Participant 1 stated, "Any siloes cause delays in the flow of work through a team and reduce the effectiveness of that team. Teams should pair program all features so that knowledge is spread across the entire team." Seven out of the 10 (70%) study participants believe that teams should pair program all features result in knowledge is transparency to the entire team. Participants 2-6 showed similar thoughts based on the responses. Participant 1 stated, "Teams should pair program all features so that knowledge is spread across the entire team. Specialization is a risk." Six out of the 10 (60%) study participants believe that effective knowledge sharing should communicate regularly and daily stand up sets the stage for the day with the commitments ASDT members. Participants 3-5 showed similar thoughts based on the responses. Participant 2 stated, "Agile teams should be in regular communication each day. The daily stand up is key in this as this sets the stage for the day with the commitments from the team members." Four out of the 10 (40%) study participants believe that effective knowledge sharing through pair programming and other skills sharing techniques can greatly improve the quality of teams work. Participants 4-6 showed similar thoughts based on the responses. Participant 3 stated, "Pair programming and other skills sharing techniques can greatly improve the quality of teams work."

Question 8. Question 8 was "What is your lived experience on how effective agile software development team knowledge management could heighten the likelihood of agile projects success?"

Table 10: Responses to Question 8 (N = 10)

Prevalent theme	Frequency	%
Teams should have a communal location for all written knowledge, like a wiki	9	90
Knowledge should be available to all team members to have read and write access	8	80
Teams should be talking every day, be co-located every day, and should work in pairs	7	70
Provide a single repository for team knowledge that everyone knows how to find	6	60
Documentation should be kept on each user story developed at minimum	5	50
Coding standards should also be enforced and up held to keep consistency throughout the organization	4	40
Passive knowledge management (ie the sharing between peers) tends to be effective		

As shown in Table 10, nine out of the 10 (90%) study participants believe that agile software development teams should have a communal location for all written knowledge, like a wiki. Participants 3-10 showed similar thoughts based on the responses. Participant 1 stated, "Teams should have a communal location for all written knowledge, like a wiki. Everyone should have read and write access to it.**"** Eight out of the 10 (80%) study participants believe that knowledge should be available to all team members to have read and write access. Participants 3-9 showed similar thoughts based on the responses. Participant 1 stated, "Everyone should have read and write access to it." Seven out of the 10 (70%) study participants believe that agile software teams should be talking every day, be co-located every day, and should work in pairs. Participants 3-8 showed similar thoughts based on the responses. Participant 1 stated, "Teams should be talking every day, be co-located every day, and should work in pairs." Six out of the 10 (60%) study participants believe that agile software development teams need to provide a single repository for team knowledge that everyone knows how to find.

Participants 3-7 showed similar thoughts based on the responses. Participant 1 stated, "That should prevent knowledge from siloing and provide a single repository for team knowledge that everyone knows how to find." Five out of the 10 (50%) study participants believe that agile software development teams documentation should be kept on each user story developed at minimum. Participants 3-6 showed similar thoughts based on the responses. Participant 2 stated, "Agile documentation should be kept at minimum but varies on the organization and the complexity of the solution implemented." Four out of the 10 (40%) study participants believe that agile software teams coding standards should also be enforced and up held to keep consistency throughout the organization. Participants 3-5 showed similar thoughts based on the responses. Participant 2 stated, "Coding standards should also be enforced and up held to maintain consistency throughout the organization."

Question 9. Question 9 was "What managerial style is best suited for managing agile software development team?"

As shown in Table 11, nine out of the 10 (90%) study participants believe that agile software development teams effective leadership style is Servant leadership - leaders should enable teams rather than direct them. Participants 3-9 showed similar thoughts based on the responses. Participant 1 stated, "Servant leadership. Leaders should enable teams rather than direct them. Let the experts in the work decide how and when work should happen, and let the leaders clear the way." Eight out of the 10 (80%) study participants believe that let the experts in the work decide how and when work should happen, and let the leaders clear the way. Participants 3-8 showed similar thoughts based on the responses. Seven out of the 10 (70%) study participants believe that agile managers and coaches should be laissez-faire. Participants 3-7 showed similar thoughts based on the responses. Participant 2 stated, "The best managerial style suited for managing agile development teams is a cross between democratic, chaotic, and laissez-faire. The agile team must be democratic. The coordination between the agile teams should be chaotic. The agile managers and coaches should be laissez-faire." Six out of the 10 (60%) study participants believe that best leadership style a cross between democratic, chaotic, and laissez-faire. Participants 3-6 showed similar thoughts based on the responses. Five out of the 10 (50%) study participants believe that servant leadership and other facilitative leadership styles. Participants 4-7 showed similar thoughts based on the responses. Participant 3 stated, "Servant leadership and other facilitative leadership styles. Leaders who delegate outcomes not actions."

Table 11: Responses to Question 9 (N = 10)

Prevalent theme	Frequency	%
Servant leadership - leaders should enable teams rather than direct them	9	90
Let the experts in the work decide how and when work should happen, and let the leaders clear the way	8	80
Agile managers and coaches should be laissez-faire	7	70
Best leadership style a cross between democratic, chaotic, and laissez-faire	6	60
Servant leadership and other facilitative leadership styles	5	50

Emergent themes. The emergent themes are those with the highest frequency (e.g., number of study participants who stated the theme in the interview questionnaire) for each question shown in the synapses of responses. As shown in Table 12, the emergent theme for question 1 is broader array of knowledge and

experience, self-manage, and reduce time to market with a frequency of nine. The emergent theme for question 2, is culture is critical to agile team software development project success with a frequency of nine. The emergent theme for question 3 is leverage technical expertise and skills and foster team effectiveness with a frequency of nine. The emergent theme for question 4 is align on outcome, work toward common goal, and same management structure with a frequency of nine. The emergent theme for question 5 is to accomplish more tasks in short time frame with a frequency of nine. The emergent theme for question 6 is teams need to work through trust issues early in a project and get to a point where there is trust across everyone on the teams with a frequency of nine. The emergent theme for question 7is all knowledge must be shared with a frequency of nine. The emergent theme for question 8 is teams should have a communal location for all written knowledge, like a wiki with a frequency of nine. Lastly, the emergent theme for question 9 is Servant leadership - leaders should enable teams rather than direct them with a frequency of nine.

Table 12: Emergent Themes Identified from Responses (N = 10)

Prevalent theme	Frequency	%
Question 1 Broader array of knowledge and experience, self-manage, and reduce time to market	9	90
Question 2 Culture is critical to agile team software development project success	9	90
Question 3 Leverage technical expertise and skills and foster team effectiveness	9	90
Question 4 Align on outcome, work toward common goal, and same management structure	9	90
Question 5 Accomplish more tasks in short time frame	9	90
Question 6 Teams need to work through trust issues early in a project and get to a point where there is trust across everyone on the teams	9	90
Question 7 All knowledge must be shared	9	90
Question 8 Teams should have a communal location for all written knowledge, like a wiki	9	90
Question 9 Servant leadership - leaders should enable teams rather than direct them	9	90

5. Discussion, Conclusions, and Recommendations

The purpose of this phenomenological research study was to understand the lived experiences of IT managers who experienced the workplace factors of cultural, functional, and organizational differences at global workplaces in the United States. The lived experiences and perceptions of 10 IT managers who experienced an ASDT project success were explored to understand the workplace factors they believed to be of value. A qualitative research approach was appropriate for the study because qualitative inquirers depict and explicate research and interpret or establish theories [45].

The primary themes found in the analysis are as follows. The themes associated with Interview Question 1 (see Table 2) were a broader array of knowledge and experience, self-manage, and reduce time to market. The themes connected with Interview Question 2 (see Table 3) were culture is critical to agile team software development project success. The themes connected with Question 3 (see Table 4) were leverage technical expertise and skills and foster team effectiveness. The themes connected with Question 4 (see Table 5) were Align on outcome, work toward common goal, and same management structure. The themes connected with Question 5 (see Table 6) were to accomplish more tasks in short time frame. The themes connected with Question 6 (see Table 7) were Teams need to work through trust issues early in a project and get to a point

where there is trust across everyone on the teams. The themes connected with Question 7 (see Table 8) were all knowledge must be shared. The themes connected with Question 8 (see Table 9) were teams should have a communal location for all written knowledge, like a wiki. The themes connected with Question 9 (see Table 10) were Servant leadership - leaders should enable teams rather than direct them.

5.1. Interpretation of the Findings

The problem was the limited understanding of the lived experiences of persons who have experienced the following workplace factors: cultural, functional, and organizational differences [67, 157, 169,187]. An open-ended questionnaire and follow up e-mails were sent to ensure that the study participants (managers or leaders) completed all of the questions accurately about their lived experiences on virtual teams. Oza and Hall [157], Espinosa and his colleagues [67], Sharma and his colleagues [187], and Reed and Knight (2009) argued that workplace factors such as cultural, functional, and organizational differences effect IT project success; however, limited studies are available to confirm the statement. As noted by Espinosa and his colleagues [67], Nair [146], and Reed and Knight [169], most researchers have studied specified variables of cost, scope, and schedule. Therefore, the findings of the study was to understand the workplace factors IT project managers believed to be of value, which is beneficial in reducing the gap and extending the existing literature. Emam and Koru [65]) found that software development projects' failure and cancellation rates are high. Ke and Wei [110] posited that the success rate of enterprise resource planning (ERP) designs is approximately 20. More study is needed to understand why IT projects continue to fail at a high rate [41,40, 204, 78, 167,227].

The main focus of the findings was on the specific and most prevalent themes among the study participants' responses to answer the three research study questions. The most common theme in Question 1, based on 9 out of the 10 (90%) participants, was that a broader array of knowledge and experience, self-manage, and reduce time to market. The most common theme linked with Question 2, based on nine out of the 10 (90%) participants, was that culture is critical to agile team software development project success. The most common theme linked with Question 3, based on 9 out of the 10 (90%) participants, was that leverage technical expertise and skills and foster team effectiveness. The most common theme linked with Question 4, based on 9 out of the 10 (90%) participants, was to align on outcome, work toward common goal, and same management structure. The most common theme linked with Question 5, based on 9 out of the 10 (90%) participants, was to accomplish more tasks in a short time frame. The most common theme linked with Question 6, based on 9 out of the 10 (90%) participants, was teams need to work through trust issues early in a project and get to a point where there is trust across everyone on the teams. The most common theme linked with Question 7, based on 9 out of the 10 (90%) participants, was all knowledge must be shared The most common theme linked with Question 8, based on 9 out of the 10 (90%) participants, was Teams should have a communal location for all written knowledge, like a wiki. The most common theme linked with Question 9, based on 9 out of the 10 (90%) participants, was Servant leadership - leaders should enable teams rather than direct them. The most common themes among the study participants' responses were used to address the three research questions to build a more comprehensive and in-depth understanding of how IT company managers or leaders perceive the effects of workplace factors to be of value.

5.2. Limitations and Constraints of the Study

The findings of the study facilitated one limitation indicated in Section 1, which were email interviews. I was able to reach my study target sample size without having to include a monetary incentive (e.g., $15) to address possible issues with voluntary participation. I also did not face any issues with response rates from using an e-mail questionnaire, as all participants were familiar with the capabilities of email; therefore, I did not have to exercise the monetary incentive (e.g., $15).

However, a few limitations still existed. For instance, the transferability of the findings led to a limitation because of the inquiry method and design of the study, the imminent sample size used, and the aim on the IT industry [161]. Lincoln and Guba noted that transferring findings into positions outside of the study setting might be challenging for inquirers because of minimal resemblance between the two settings [172]. The introduced descriptive data (e.g., population and sample) in the research study might not be adequate for other inquirers to apply the findings to other settings. Transferring the study findings to other industries might be difficult because of the specific focus on the IT industry and the sample used in the study.

Another limitation was the creation of participant biases, which might have shaped the study results. The bias was that the participants seemed to believe that the workplace factors he or she stated were the most effective and no other factors were as effective in assuring project success. Therefore, the participants did not appear to conceive a wide spectrum of other workplace factors that might be more effective than what he or she had experienced. Finally, this study was constraint to 10 IT project managers or leaders who had have experience with agile software development team project success workplace location based in the United States.

5.3. Implications and Recommendations

IT projects continue to fail at an unacceptable rate despite the steps taken by organizational managers to streamline the processes [171,225]. The implications of the research study may be significant to IT project managers, management teams, and resources working from global workplaces. Business managers in the IT industry, and managers from other industries, can use the data gathered in the research study to develop strategies to improve project management and benefits to reduce IT project failures and cancellation rates. The links between workplace factors and IT project success reconfirm the significance to the outcome of projects. Researchers may use the current study to explore additional workplace factors and different contexts. The findings from the research study include some productive considerations for managers who wish to succeed in IT project endeavors. Workplace factors such as cultural, functional, and organizational differences play a role in the project success. Organizational managers should be aware that ignoring workplace factors could threat the success of ASDT projects [171].

IT organizational leaders are seeking for the root causes of project failure. The findings from the research study offer the ground for future studies to explore the effect of workplace factors on IT project success. The following factors, if included, may gain accomplish a positive and generalized result. Failure to conceive and leverage the findings may lead to project failure. The factors to be conceived are (a) employ a larger sample

size, (b) employ quantitative methodologies to corroborate the outcomes obtained from the current study, (c) encompass IT professionals from various firms and global workplaces, and (d) carry out a mixed research study on the effect of workplace factors on IT project success.

There are several recommendations for future studies. The first recommendation is with the same sample size and method; future researchers should encompass (a) participants' work location based in China or other countries, (b) participants consist of virtual team leaders instead of managers, (c) participants consist of virtual team members instead of managers, and (d) participants consist of agile team members who work for the IT industry. The second recommendation is for a larger sample size and same method; scholars should include participants as mentioned in (a) to (d) above. The third recommendation is for future researchers to use a large sample size and a quantitative study.

I trusted in the data offered by the participants that was rooted on a survey questionnaire. By interviewing the IT professionals or managers, greater details about project success or failure could be obtained. Moreover, the triangulation technique could be used to corroborate the findings. By encompassing IT professionals from distinct firms around the globe, a representative sample could be obtained that could be employed to generalize the findings.

The final recommendation is to carry out a mixed-methodology research study on the effect of workplace factors on IT projects. I found significant links between workplace factors and IT project success. A mixed-methodology research study could be employed to reconfirm and generalize the findings.

5.3.1. Recommendations for Actions

In order for IT organizations to remain competitive, software quality, employee satisfaction, and safer and healthier organization should be used to help reduce the current project cancellation and failure rates; project managers need to proactively implement new ASDT practices. To help accomplish this, the following recommendations or strategies for organizational managers and HR personnel work together to build an effective virtual project team: (a) establish cultural awareness and training programs to help train new team members; (b) select new candidates with good communication skills as well as prior or current experience virtual team practices; (c) institute continuous training programs to encourage team members to improve their technical skills as well as communication skills; (d) routinely conduct risk assessment on current project and its team members technical skills; (e) Establish strong trust with other team members at the beginning of a new project inception; (f) Encourage team members to work with Sr. engineers and learn from their expertise; (g) Promote team members to do cross-functional training or learning; (h) Invite key stakeholders to attend meetings right at the beginning of project inception; (i) Encourage team members to utilize communication tools; (j) Sr. managers need to provide realistic expectations for all team members to achieve; and (k) Select product owner or scrum Master had prior experience with ASDT project.

Without designing formal reporting structures, there is a risk that the distant team members may not report properly, due to misunderstandings and cultural differences. The threat here is that ASDT members may accept

tasks that they are badly equipped to perform; risk management should be integrated into well-planned ASDT software projects. ASDT projects bring additional exposure to risks, which are linked with dealing a culturally diverse global team.

5.3.2. Implications for Positive Social Change

This study has implications for positive social change. The literature review depicted that the body of knowledge available covers several internal factors such as project planning, project and resource management, leadership styles, and time allocated, and how they effect project success. If the linkage between workplace factors and project success can be documented and researched, firms will be able to extradite services to customers, heightening efficiency with fewer defects or errors, resulting in a safer and healthier organization.

Because IT is a critical element in public and private sectors, this research study has important implications for IT project management. This research study suggests an approach that can enhance IT project success. This study contributes to IT by understanding the workplace factors of cultural, functional, and organizational differences that could have an effect on IT project success. This research study offers a better understanding of the effect of workplace factors when resources work from distinct workplaces.

5.3.3. Implication for Practice

Managing an agile software development teamwork in the global workplace is challenging. Numerous managers have an ongoing struggle to establish commitment to common goals, align and enforce performance expectations, build trust, motivate members to collaborate and share knowledge and navigate personality issues. ASDT members must be able to adapt to distinct cultures and work styles, leverage harmonious team processes, and use appropriate ICTs to produce efficiencies in the global workplace. The findings from this research study are significant step in this guidance. Managers and leaders who are involved in the operating of ASDTs need to understand diversity and its diverse forms. Managers should understand the possible presence of deep degree attributes in team members and as such, training should be offered to aid in the process of relationship establishing among ASDT members. Furthermore, managers themselves should be trained and advised on the development and improvement of ASDT processes in order to harvest greater effectiveness and effective team performance returns from their teams. Managers or leaders also need to understand the interaction between team diversity and task programming requirements; the study outcomes indicate that more diverse ASDTs can be confined with interdependent tasks that demand higher degrees of motivation from team members.

ASDTs usually rely on ICTs, such as email, IM, teleconferences, videoconferences and group decision support systems. The study findings indicate that decision makers should aim on the collaborative facets of the technology. For instance, managers should select an ICT that encourages parallelism, transparency, and sociality. Designers of ICT should integrate such features when developing new technology. Once the ICTs have been selected, managers need to offer training to promote the utilization of these new features. Implementation of language policies and training is a path worth pursuing for the ASDT manager as outcomes from F2F teams indicate that common language proficiency has a firm impact on communication effectiveness.

Cultural training and facilitation aiming on cultural differences in media utilization and communication could also evidence beneficial for ASDT functioning. Ultimately, the physical presence of an individual who can work as inter-unit mediator could countermeasure the negative effects of intercultural ICT communication.

5.4. Conclusion

The purpose of this phenomenological study was to understand the lived experiences of IT managers or leaders with the workplace factors of cultural, functional, and organizational differences at global workplaces based in the United States. By comparing the outcomes of the opened interview questionnaires to the literature in this research study, it is clear that workplace factors such as cultural, functional, and organizational differences could effect IT project success. The current literature emphasizes the significance of cultures and suggests avenues to bridge the differences among them. Software developers or engineers who spend time operating together with resources from distinct countries have a better opportunity of shrinking risks linked with misunderstandings caused by cultural differences. The on budget, time, and accurate extradite of a software development project depends on the amount of time of experience during which a software engineer had utilized the same language in a work climate as his or her counterpart working from other workplaces.

IT managers identified cultural and functional differences as the most significant barriers to project success. The study findings indicate that effective teams were able to overcome these barriers to accomplish success, but this success was accomplished through the implementation of special alignment, communication, and cognitive processes oriented to aid teams to work through barriers but with considerable additional cost and effort.

Author Biography

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Dedication

First, the researcher would like to dedicate this research study to God who saved me three times from drowning at sea; and another time while he was on a kayak fishing at lake in Texas. Secondly, the researcher would also like to dedicate this research study to my blood parents Do Nguyen and Tai Thi Dang; and my American parents Raymond L. Schilling and Lucille M. Schilling who raised and influenced me since seventh grade and throughout high school and my sponsors (Ms. Alinda, Ms. Hildegarde, and Ms. Renata Weiss). Third, the researcher would like to dedicate this research to my wife, Hồng Nhung Trương, and my sons (Bill Lê and Jacob Schilling). Finally, this research study would not have been possible and successful without those American soldiers (58,226) and South Vietnamese soldiers (1,250,000) who fought and died for the war.

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1. Appendix A: Letter of Invitation

2. Letter of Invitation

Dear_____,

I am Dan Schilling Nguyen. The purpose of this letter is to invite you to participate in a research study on *Workplace Factors That Shape Agile Software Development Project Success*. The result of this study may be useful to your organization because as research on these factors has been limited.

I would like to conduct electronic mail open-ended interview with you. If you currently or had prior experiences with managing or leading a virtual team. Then I would like to interview or collect data on this topic, which will be kept in confidence and analyzed in this research, study. An executive summary of the research will be offered to you at the end of this study by electronic mail. The interview will assume about 15 to 25 minutes.

If you are interested to be a participant in this study, could you please contact me via email or call me. After I have confirmed your interest, you should plan to follow up by me sending the consent form with the questionnaire. Please contact me at dan.s.n.linkedin@gmail.com or call me, if you have any questions or concerns.

Thank you,

Dan S. Nguyen

dan.s.n.linkedin@gmail.com

Appendix B: Participant Informed Consent Form

Informed Consent: Participants 18 years of age and older

You are cordially invited to participate in a research study of workplace factors that shape agile software development team project success. This form is part of a process called –informed Consent– to allow you to understand this study before determining whether to participate. You were selected as a possible candidate for the study because you are a member or affiliate of an organization that has agreed to allow the researcher to solicit participants for the study. This study is being conducted by a researcher named Dan S. Nguyen.

Background Information:

The purpose of the research study is to explore the workplace factors leading to agile team project success to aid in the improvement of future project success and reduce the failure and cancellation rates among agile team projects in the IT industry.

Procedures:

If you agree to be in this study, you will be asked to take a brief electronic questionnaire. The questionnaire takes approximately 15 minutes to complete. The researcher will request that participants provide an email address at the end of the survey (last question). Providing an email address is voluntary. The email address will be used to follow-up with participants concerning any areas of the survey results that may need more clarification. Also the researcher will use the email address to provide the graphical responses and results of each participant's individual survey. This is a method called member checking, and it is used to ensure that the participant's answers are not misconstrued in any manner. This email address will remain confidential along with the rest of the data received in this study and will never be shared with anyone else besides the researcher.

Voluntary Nature of the Study:

Your participation in this research study is voluntary. This implies that everyone will respect your decision of whether or not you would like to be in the study. No one at your company will treat you differently if you determine not to be in the study. If you determine to join the study now, you can still change your mind during the study. If you feel stressed during the study you may stop at any time. You feel free skip any questions that you think are too personal.

Compensation:

There will be no compensation furnished for your participation in this study.

Confidentiality:

Any data you offer will be kept private. There is no provision for putting a name on the survey; thus, participants will be unknown. All information will be kept confidential on a separate server. Only the researcher and Walden faculty mentoring the researcher will have access to the raw data. The researcher will not use your data for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could distinguish you in any reports of the study.

Risks and Benefits of Being in the Study:

Your personal info will rest confidential, so there is no personal risk linked with participating in the inquiry, nor will it have a negative impact on your standing within your firm. The study does not engage any physical risk and it is highly unlikely that you will be psychologically affected. The benefits of the inquiry include improvement to teleworking, agile, dispersed stakeholder networks and teams. This inquiry could assist furnish an improve understanding of what type of individuals should be working in these groups and what type of strategies leaders should use while overseeing these stakeholders.

Appendix C: Pilot Tested Questionnaire

Interview Questions – Pilot Test

Project: Workplace Factors That Shape Agile Software Development Project Success: A Phenomenological Study

Date:

Location:

Participant:

Interviewer: Dan S. Nguyen

The purpose of the research study is to explore the workplace factors leading to agile software development

team project success to aid in the improvement of future project success and reduce the failure and cancellation rates among agile team projects in the IT industry. The study includes agile development company team leader or above whom had prior experienced or current experience in managing agile team project. The participants must have knowledge of agile team processes to be included in the research study.

Your participation in the research study is voluntary. If you choose not to participate or to withdraw from the test at any time, you can do so without penalty or loss of benefit to yourself. There are no foreseeable risks to you from partaking in the research study. Dan S. Nguyen, the interviewer, will include your responses in the research study and will keep your identity confidential. I would like to take this opportunity to thanks you in advance for your participation with this research study. After completed filling out the study interview questions, could you please kindly email them back to me at dan.s.linkedin@gmail.com.

Preliminary questions:

Are at least 18 year of age?

☐ No – Thank you! You can stop from here.

☐ Yes – Please proceed to the next question.

Do you currently or had prior experience with managing or leading an agile team?

☐ No - Thank you! You can stop from here.

☐ Yes – Please proceed to the next question.

Questions:

1. What is your lived experience with agile software development team? Please explain in two to three sentences.

2. What is your lived experience with agile software development team cultural differences that could effect agile software project success? Please explain in two to three sentences.

3. What is your lived experience with agile software development team functional differences (e.g. when more than one area of functional expertise is represented within a team) that could effect agile software project success or related to team-rated performance. Please explain in two to three sentences.

4. What is your lived experience with agile software development team organizational differences (e.g. multiple vendors increases project complexity as an outcome of different and sometimes conflicting sets of goals and success measures) that could effect agile software project success? Please explain in two to three sentences.

5. What is your lived experience with effective agile software development team coordination (e.g., task programming and team communication) that could enhance the chance of success of agile software projects? Please explain in two to three sentences.

6. What is your lived experience with effective agile software development team trust that could enhance the chance of success of agile software projects? Please explain in two to three sentences.

7. What is your lived experience with effective agile software development team knowledge sharing that could enhance the chance of success of agile software projects? Please explain in two to three sentences.

8. What is your lived experience with effective agile software development team knowledge management that could enhance the chance of success of agile software projects? Please explain in two to three sentences.

9. What managerial style is best suited for managing agile software development teams? Please explain in two to three sentences.

Demographic questionnaire:

1. What is your age? (Please check 1 response)

☐ 19-29 ☐ 30- 39 ☐ 40-49 ☐ 50-59 ☐ 60 +

2. What is your gender? (Please check 1 response)

☐ Male ☐ Female

3. How many years of experience do you have with collocated project teams? (Please check 1 response)

☐ 1- 5 ☐ 6 – 10 ☐ 11 - 15 ☐ 16 - 20 ☐ 21 – 25 ☐ 26+

4. How many years of experience do you have with virtual team projects? (Please check 1 response)

☐ 1- 5 ☐ 6 – 10 ☐ 11 - 15 ☐ 16 - 20 ☐ 21 – 25 ☐ 26+

5. What is your current industry? (Please check 1 response)

☐ Agriculture

☐ Constructions

☐ Finance and Banking

☐ Information Technology

☐ Manufacturing

☐ Pharmaceutical

☐ Retail and Wholesale

☐ Other (Please specify)

Appendix D: Interview Questionnaire

Interview Questions

Project: Workplace Factors That Shape Agile Software Development Project Success: A Phenomenological Study

Date:

Location:

Participant:

Interviewer: Dan S. Nguyen

The purpose of the research study is to explore the workplace factors leading to agile software development team project success to aid in the improvement of future project success and reduce the failure and cancellation rates among agile team projects in the IT industry. The study includes agile development company team leader or above whom had prior experienced or current experience in managing agile team project. The participants must have knowledge of agile team processes to be included in the research study.

Your participation in the research study is voluntary. If you choose not to participate or to withdraw from the test at any time, you can do so without penalty or loss of benefit to yourself. There are no foreseeable risks to you from partaking in the research study. Dan S. Nguyen, the interviewer, will include your responses in the research study and will keep your identity confidential. I would like to take this opportunity to thanks you in advance for your participation with this research study. After completed filling out the study interview questions, could you please kindly email them back to me at dan.s.linkedin@gmail.com.

Preliminary questions:

Are at least 18 year of age?

☐ No – Thank you! You can stop from here.

☐ Yes – Please proceed to the next question.

Do you currently or had prior experience with managing or leading an agile team?

☐ No - Thank you! You can stop from here.

☐ Yes – Please proceed to the next question.

Questions:

1. What is your lived experience with agile software development team? Please explain in two to three sentences.

2. What is your lived experience with agile software development team cultural differences that could effect agile software project success? Please explain in two to three sentences.

3. What is your lived experience with agile software development team functional differences (e.g. when more than one area of functional expertise is represented within a team) that could effect agile software project success or related to team-rated performance. Please explain in two to three sentences.

4. What is your lived experience with agile software development team organizational differences (e.g. multiple vendors increases project complexity as an outcome of different and sometimes conflicting sets of goals and success measures) that could effect agile software project success? Please explain in two to three sentences.

5. What is your lived experience with effective agile software development team coordination (e.g., task programming and team communication) that could enhance the chance of success of agile software projects? Please explain in two to three sentences.

6. What is your lived experience with effective agile software development team trust that could enhance the chance of success of agile software projects? Please explain in two to three sentences.

7. What is your lived experience with effective agile software development team knowledge sharing that could enhance the chance of success of agile software projects? Please explain in two to three sentences.

8. What is your lived experience with effective agile software development team knowledge management that could enhance the chance of success of agile software projects? Please explain in two to three sentences.

9. What managerial style is best suited for managing agile software development teams? Please explain in two to three sentences.

Demographic questionnaire:

1. What is your age? (Please check 1 response)

☐ 19-29 ☐ 30- 39 ☐ 40-49 ☐ 50-59 ☐ 60 +

2. What is your gender? (Please check 1 response)

☐ Male ☐ Female

3. How many years of experience do you have with collocated project teams? (Please check 1 response)

☐ 1- 5 ☐ 6 – 10 ☐ 11 - 15 ☐ 16 - 20 ☐ 21 – 25 ☐ 26+

4. How many years of experience do you have with virtual team projects? (Please check 1 response)

☐ 1- 5 ☐ 6 – 10 ☐ 11 - 15 ☐ 16 - 20 ☐ 21 – 25 ☐ 26+

5. What is your current industry? (Please check 1 response)

☐ Agriculture

☐ Constructions

☐ Finance and Banking

☐ Information Technology

☐ Manufacturing

☐ Pharmaceutical

☐ Retail and Wholesale

☐ Other (Please specify)

Appendix E: Pilot Responses

Interview Questions – Pilot Test

Project: Workplace Factors that Shape Agile Software Development Team Project Success: A Phenomenological Study

Date: 1/24/2016

Location: St. Louis, MO

Participant: SP1

Interviewer: Dan S. Nguyen

The purpose of the research study is to explore the workplace factors leading to agile development team project success to aid in the improvement of future project success and reduce the failure and cancellation rates among agile team projects in the agile development industry. The study includes agile development company team leader or above whom had prior experienced or current experience in managing a virtual team project. The participants must have knowledge of virtual team processes to be included in the research study.

Your participation in the research study is voluntary. If you choose not to participate or to withdraw from the test at any time, you can do so without penalty or loss of benefit to yourself. There are no foreseeable risks to you from partaking in the research study. Dan S. Nguyen, the interviewer, will include your responses in the research study and will keep your identity confidential. I would like to take this opportunity to thanks you in advance for your participation with this research study. After completed filling out the study interview questions, could you please kindly email them back to me at dan.s.linkedin@gmail.com.

Preliminary questions:

Are at least 18 year of age?

☐ No – Thank you! You can stop from here.

☒ Yes – Please proceed to the next question.

Do you currently or had prior experience with managing or leading an agile team?

☐ No - Thank you! You can stop from here.

☒ Yes – Please proceed to the next question.

Questions:

1. What is your lived experience on an agile software development team? Please explain in two to three sentences.

Served basically every role on an agile software team, from **leader to individual contributor, to coach and mentor, to director of several teams**.

2. What is your lived experience with agile software development team cultural differences that could effect agile software project success? Please explain in two to three sentences.

(question is unclear. Does it mean the cultural backgrounds of the team members or the prevalent culture of the agile software team.) Assuming the first meaning, this is pretty important. There **are cultures around the world that are more reluctant to speak up or are less comfortable with conflict**. These are elements of

creating a **non-hierarchical team**, where **people are free to communicate as needed**. **Culture is critical**.

3. What is your lived experience with agile software development functional differences (e.g. when more than one area of functional expertise is represented within a team) that could effect agile software project success or related to team-rated performance. Please explain in two to three sentences.

Teams need to be cross-functional, meaning that every field of **knowledge needed for the team to progress needs to be present on the team**. Additionally, team members need to **cross-train each other in their specialties, to avoid overproducing the wrong kind of work item** or waiting on another specialty to finish before work can continue.

4. What is your lived experience with agile software development team organizational differences (e.g. multiple vendors increases project complexity as an outcome of different and sometimes conflicting sets of goals and success measures) that could effect agile software project success? Please explain in two to three sentences.

Team members all need to be working towards the same goal, which is enhanced by having them in the **same management structure**. If teams serve multiple managers, then they will have **different goals and that will cause conflicts and miscommunications** on the team.

5. What is your lived experience with effective agile software development team coordination (e.g., task programming and team communication) that could enhance the chance of success of agile software projects? Please explain in two to three sentences.

These are things that the **team should be taking care of themselves**. They should be **defining, understanding, performing, and testing** the work. There is absolutely no need for **a project manager to interject themselves, and doing so will decrease the effectiveness** of an agile software team.

6. What is your lived experience with effective agile software development team trust that could enhance the chance of success of agile software projects? Please explain in two to three sentences.

Lack of trust shows up as **siloes of knowledge and unwillingness to cooperate**. Teams need to **work through trust issues early in a project** and **get to a point where there is trust across everyone on the teams**. This is especially necessary to create an environment where teams can **improve during their retrospectives**.

7. What is your lived experience with effective agile software development team knowledge sharing that could enhance the chance of success of agile software projects? Please explain in two to three sentences.

All knowledge must be shared. Any **siloes cause delays in the flow of work through a team and reduce the effectiveness of that team**. **Teams should pair program all features so that knowledge is spread across the entire team**. **Specialization is a risk**.

8. What is your lived experience with effective agile software development team knowledge management that could enhance the chance of success of agile software projects? Please explain in two to three sentences.

Teams should have **a communal location for all written knowledge, like a wiki**. Everyone **should have read and write access** to it. **Teams should be talking every day, be co-located every day, and should work in pairs**. That should prevent knowledge from siloing and **provide a single repository for team knowledge that everyone knows how to find**.

9. What managerial style is best suited for managing agile software development teams? Please explain in two to three sentences.

Servant leadership. **Leaders should enable teams rather than direct them**. **Let the experts in the work decide how and when work should happen, and let the leaders clear the way**.

Demographic questionnaire:

1. What is your age? (Please check 1 response)

☐ 19-29 ☐ 30- 39 ☐ 40-49 ☒ 50-59 ☐ 60 +

2. What is your gender? (Please check 1 response)

☒ Male ☐ Female

3. How many years of experience do you have with collocated project teams? (Please check 1 response)

☐ 1- 5 ☐ 6 – 10 ☐ 11 - 15 ☐ 16 - 20 ☐ 21 – 25 ☒ 26+

4. How many years of experience do you have with virtual team projects? (Please check 1 response)

☒ 1- 5 ☐ 6 – 10 ☐ 11 - 15 ☐ 16 - 20 ☐ 21 – 25 ☐ 26+

5. What is your current industry? (Please check 1 response)

☐ Agriculture

☐ Constructions

☐ Finance and Banking

☒ Information Technology

☐ Manufacturing

☐ Pharmaceutical

☐ Retail and Wholesale

☐ Other (Please specify)

Project: Factors That Shape Agile Software Development Project Success: A Phenomenological Study

Date: 1/25/2016

Location: Indianapolis, IN

Participant: SP2

Interviewer: Dan S. Nguyen

The purpose of the research study is to explore the workplace factors leading to agile development team project success to aid in the improvement of future project success and reduce the failure and cancellation rates among agile team projects in the IT industry. The study includes agile development company team leader or above whom had prior experienced or current experience in managing agile team project. The participants must have knowledge of agile team processes to be included in the research study.

Your participation in the research study is voluntary. If you choose not to participate or to withdraw from the test at any time, you can do so without penalty or loss of benefit to yourself. There are no foreseeable risks to you from partaking in the research study. Dan S. Nguyen, the interviewer, will include your responses in the research study and will keep your identity confidential. I would like to take this opportunity to thanks you in advance for your participation with this research study. After completed filling out the study interview questions, could you please kindly email them back to me at dan.s.linkedin@gmail.com.

Preliminary questions:

Are at least 18 year of age?

☐ No – Thank you! You can stop from here.

☒ Yes – Please proceed to the next question.

Do you currently or had prior experience with managing or leading an agile team?

☐ No - Thank you! You can stop from here.

☒ Yes – Please proceed to the next question.

Questions:

1. What is your lived experience with agile software development team? Please explain in two to three sentences. I have lead small agile transformations. I have also stood up agile teams from inception to development including training and coaching of agile team members.
2. What is your lived experience with agile development team cultural differences that could effect agile project success? Please explain in two to three sentences. Traditional waterfall methodology process adherence can hinder agile implementation. Without organizational support and commitment to the agile methodology, teams can become isolated within the organization and fall backwards to development against a traditional timeline and milestones.
3. What is your lived experience with agile software development functional differences (e.g. when more than one area of functional expertise is represented within a team) that could effect agile project success or related to team-rated performance. Please explain in two to three sentences. It is key that each member from their functional area is empowered enough to make decisions to adhere to the agile development cadence. Working within 2-3 week sprints requires team members to break down silos especially when trying to change organizational culture.
4. What is your lived experience with agile software development team organizational differences (e.g. multiple vendors increases project complexity as an outcome of different and sometimes conflicting sets of goals and success measures) that could effect agile project success? Please explain in two to three sentences. Vendors and outside teams that can affect the sprint deliverable have to be coached on the agile development cycle as well. Agile teams can be demanding in their request give their sprint cycles and release horizons.
5. What is your lived experience with effective agile development team coordination (e.g., task programming and team communication) that could enhance the chance of success of agile projects? Please explain in two to three sentences. With agile team coordination it is essential that the scrum masters and product owners from the respective teams regularly communicate. The results of these communication sessions should be shared with the team through the grooming of the backlog. Larger coordination sessions made be needed depending on the number of teams and the specific agile framework you are implementing such as scaled agile framework (SAFe) or large scale scrum (LeSS).
6. What is your lived experience with effective agile software development team trust that could enhance the chance of success of agile projects? Please explain in two to three sentences. Ideally teams should be self-organizing. This self-organization inherently builds trust as teams will usually organize themselves around people who they have confidence in their work or have worked with in the past. Assigning teams is not ideal in the agile, however it does occur. Coaching and adhering to the agile ceremonies helps to build trust through communication and dissemination of information.
7. What is your lived experience with effective agile software development team knowledge sharing that

could enhance the chance of success of agile projects? Please explain in two to three sentences. Agile teams should be in regular communication each day. The daily stand up is key in this as this sets the stage for the day with the commitments from the team members. Ideally, the daily stand up should take place before development begins for the day. However in cases of distributed teams, adjustments made need to be made.

8. What is your lived experience with effective agile development team knowledge management that could enhance the chance of success of agile projects? Please explain in two to three sentences.

   Documentation should be kept on each user story developed. Agile documentation should be kept at minimum but varies on the organization and the complexity of the solution implemented. Coding standards should also be enforced and up held to maintain consistency throughout the organization.

9. What managerial style is best suited for managing agile development teams? Please explain in two to three sentences.The best managerial style suited for managing agile development teams is a cross between democratic, chaotic, and laissez-faire. The agile team must be democratic. The coordination between the agile teams should be chaotic. The agile managers and coaches should be laissez-faire.

Demographic questionnaire:

1. What is your age? (Please check 1 response)

☐ 19-29 ☒ 30- 39 ☐ 40-49 ☐ 50-59 ☐ 60 +

2. What is your gender? (Please check 1 response)

☒ Male ☐ Female

3. How many years of experience do you have with collocated project teams? (Please check 1 response)

☐ 1- 5 ☒ 6 – 10 ☐ 11 - 15 ☐ 16 - 20 ☐ 21 – 25 ☐ 26+

4. How many years of experience do you have with virtual team projects? (Please check 1 response)

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Project: Factors That Shape Agile Software Development Project Success: A Phenomenological Study

Date:

Location:

Participant: SP3

Interviewer: Dan S. Nguyen

The purpose of the research study is to explore the workplace factors leading to agile development team project success to aid in the improvement of future project success and reduce the failure and cancellation rates among agile team projects in the IT industry. The study includes agile development company team leader or above whom had prior experienced or current experience in managing agile team project. The participants must have knowledge of agile team processes to be included in the research study.

Your participation in the research study is voluntary. If you choose not to participate or to withdraw from the test at any time, you can do so without penalty or loss of benefit to yourself. There are no foreseeable risks to you from partaking in the research study. Dan S. Nguyen, the interviewer, will include your responses in the research study and will keep your identity confidential. I would like to take this opportunity to thanks you in advance for your participation with this research study. After completed filling out the study interview questions, could you please kindly email them back to me at dan.s.linkedin@gmail.com.

Preliminary questions:

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☒ Yes – Please proceed to the next question.

Do you currently or had prior experience with managing or leading an agile team?

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☒ Yes – Please proceed to the next question.

Questions:

1. What is your lived experience with agile software development team? Please explain in two to three sentences.

13 years experience in agile, originally as a developer, then leading teams, now as a consultant.

2. What is your lived experience with agile development team cultural differences that could effect agile project success? Please explain in two to three sentences.

Teams need to be comfortable with direct and honest communications. Cultures that prioritise indirect and face saving communication seem to struggle with agile.

3. What is your lived experience with agile development functional differences (e.g. when more than one area of functional expertise is represented within a team) that could effect agile project success or related to team-rated performance. Please explain in two to three sentences.

Teams need to be cross-functional in order to be successful. Mono-function teams will fail to be responsive.

4. What is your lived experience with agile development team organizational differences (e.g. multiple vendors increases project complexity as an outcome of different and sometimes conflicting sets of goals and success measures) that could effect agile project success? Please explain in two to three sentences.

Teams need to be aligned on outcome. Multiple teams can be very successful, as long as they are working to the same goals.

5. What is your lived experience with effective agile development team coordination (e.g., task programming and team communication) that could enhance the chance of success of agile projects? Please explain in two to three sentences.

Colocation is important to team success. Teams that are distributed can be succesfull, but need greater investment in communication technologies. It also helps to setup distributed teams in the same timezone.

6. What is your lived experience with effective agile development team trust that could enhance the chance of success of agile projects? Please explain in two to three sentences.

Agile is predicated on trust. Trust between peers, between leaders and teams and between client and vendor. Without trust (.e.g requiring strict contracts) agile will fail.

7. What is your lived experience with effective agile development team knowledge sharing that could enhance the chance of success of agile projects? Please explain in two to three sentences.

Pair programming and other skills sharing techniques can greatly improve the quality of teams work.

8. What is your lived experience with effective agile development team knowledge management that could enhance the chance of success of agile projects? Please explain in two to three sentences.

Minimal experience. Passive knowledge management (ie the sharing between peers) tends to be effective.

9. What managerial style is best suited for managing agile development teams? Please explain in two to three sentences.

Servant leadership and other facilitative leadership styles. Leaders who delegate outcomes not actions.

Demographic questionnaire:

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