



Roles of Middle Managers in Agile Project Governance

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Abstract. Project governance is an important activity in agile software development (ASD) projects for project success. Middle managers are part of the governance structure in ASD projects. Despite the efficacy of project governance and existence of middle managers in agile teams, project governance and middle management in ASD projects are under-researched. This multiple-case study investigates the roles of middle managers in agile project governance activities within two Nigerian ASD projects through the lens of activity theory. We collected data in semi-structured interviews, observations, questionnaires, and company documents. Our findings show that middle managers performed 25 roles related to planning and coordination for project alignment and execution, continuous improvement and organisational change, agile and technical leadership, monitoring, and capability building. We conclude that middle managers are pivotal to project governance practice and the effective functioning of agile teams in ASD projects. The study will help agile practitioners to better understand the roles of middle managers in agile project governance. Results from this work contribute to the ‘middle management in agile’ debate and offer an alternative view that may change beliefs about middle managers in agile project settings.

Keywords: Agile project governance · Middle managers · Agile software development · Activity theory · Interpretive case study

1 Introduction

Project governance (PG) is an important but complex activity performed during agile software development (ASD) projects, and encompasses the necessary oversight, processes, tools, manpower, and support to accomplish projects [23]. Despite its importance, PG vis-à-vis ASD projects, is under-researched and not fully understood [13, 23].

Middle managers (MMs) in ASD projects participate in project activities, relay senior management (top management) directives to lower-level personnel, ensure implementation of directives in projects, and communicate implementation progress reports back to senior management (SM). MMs in agile teams may

include Scrum masters as gatekeepers and product owners as stakeholder representatives [29], as well as line managers [1]. Although MMs exist in agile teams, there is a lack of clarity about the role of MMs in ASD projects [12, 24], and Barroca et al. [6] show this is one of the top ranked challenges affecting agile teams. Agile projects are considered lightweight, self-organising, and flexible, hence practitioners question how ‘management’ and ‘governance’ fit in. Middle manager (MM) role uncertainty may generate tensions within agile teams during task execution [12], thereby threatening team stability and project congruity.

To shed light on this topic, this study seeks to answer the question: *What are the roles of middle managers in agile project governance?* To answer, we conduct case studies of PG activities in ASD projects within two companies: HOLDCOY and BANKCOY, in order to determine the roles of MMs in agile PG.

This article is an extended version of [32], which presented preliminary findings from a single case study. In this extended article, we include further empirical data from additional interviews and observations conducted in the first case study and findings from a second case study to present a composite thematic model of middle management roles in agile project governance (PG).

2 Related Work

PG is the “framework, functions, and processes that guide project management activities in order to create a unique product, service, or result to meet organizational strategic and operational goals” [28, p. 4]. In project management, governance includes “the set of policies, regulations, functions, processes, procedures and responsibilities” that are involved in establishing, managing, and controlling projects, programmes, and portfolios [2, p. 8]. PG is an important project activity with the capacity to advance project performance and success. It provides SM with crucial information to make informed investment and risk decisions regarding projects, while allowing developers to build products iteratively and incrementally under conditions of uncertainty [16]. PG enables operation of governance mechanisms, roles, and metrics, which allow project personnel to monitor project performance and risks in order to realise business value [31].

Kujala et al. [21] derived a six-dimensional PG framework, which Lappi et al. [23] synthesised with findings from their review of 42 agile studies to develop a framework conceptualising agile PG in six PG dimensions, viz., goal setting, incentives, monitoring, coordination, roles and decision-making power, and capability building. This agile PG framework by [23] answered the question: “What is agile project governance?” in Lappi [22]. The six PG dimensions include activities, agile practices, and roles that are utilised and performed by various actors in agile PG [23]. For example, agile PG actors include the project manager: acts as coordinator or administrator of agile team; agile coach: supervises agile capabilities in agile team; and Scrum master: manages team performance and sprints. They did not discuss the actors in the context of organisational levels they belong to, hence middle management was not considered. However, the study calls for further research to better understand agile PG across organisational levels and

its pervading effects in organisations; “from top management via projects to individuals” [23, p. 54]. The authors also highlight weak organisation-project strategic connections as an agile PG issue and the need for further research to examine how PG structures and practices can help strengthen such connections.

Middle managers (MMs) are the intermediary workforce that link SM with other teams that operate in the lower echelon of an organisation [5]. They occupy the middle-level position in an organisation’s governance structure, reporting to SM who provide strategic direction, and serving as nexus between SM and the workforce that executes core tasks at project-level [5]. In essence, MMs receive, consume and transmit strategic directives in top-down fashion, perform and oversee implementation activities, and communicate implementation reports to SM. According to Cheng et al. [8], MMs are subordinate to SM and supervise at least two layers of lower-ranking staff. Still, the positions “in the middle” may vary depending on organisation size and context [4]. For instance, several layers of people may be positioned “in the middle” in large organisations, and in the wider organisation they are all regarded as MMs. Smaller organisations may have fewer organisational levels and few people in the middle echelon.

Kalenda et al. [19] argues that agile teams are no longer expected to be managed by MMs. MMs are seen as liabilities to organisational agility because they tend to resist change and agile transformation initiatives [19]. Nevertheless, there is ‘management’ and ‘leadership’ in agile settings. Parker et al. [27] suggest when a manager embraces agile practices, the manager can become an adaptive leader while managing the agile team. Little is known about MM role in ASD projects [6, 12, 24]. Hoda et al. [17] examined self-organising roles in ASD teams and identified several self-organising roles that exist within agile teams, viz., mentor, coordinator, champion, promoter, translator, and terminator. They highlighted positive influences of SM in supporting self-organising agile teams, however, the role of MMs was not considered in the study. Shastri et al. [30] examined the “agile manager” role in agile project management in a generic context without specifying the managerial level. They identified four agile manager roles: coordinator, mentor, negotiator, and process adapter. Moe et al. [24, p. 16] mentions “Redefining the managers [*sic*] role” and “Right level of responsibility” as major barriers to effective functioning of self-organising teams, thus highlighting issues in ASD projects, which includes issues associated with middle management and governance. There is also a lack of understanding as to the decision-making power of MMs, and the legacy roles required in ASD projects [24].

Regarding impact of MMs in ASD projects, Russo [29] reports in an agile transformation study that MMs were taking the roles of Scrum masters and product owners. They were ranked above developers. The MMs were hands-on in mediating between SM software expectations and daily development issues to develop a desired system. SM valued the domain knowledge and adaptability of the Scrum masters, who also served as gatekeepers that focused on agile values in the project environment. Scrum master leadership skills were also vital in dealing with various day-to-day project issues. Product owners ensured alignment

between stakeholder expectations and completed software features. Hermkens et al. [15] argue that MMs will remain instrumental to organisational agility, albeit this brings changes to the role of MMs. [15] therefore calls for research to ascertain the impact of the agile approach on the middle management role, as well as ascertain the roles of MMs that are most contributory to organisational agility.

3 Research Design and Case Description

This study adopts a qualitative and interpretive multiple-case study design. This is well-suited because it puts the researchers in the world of the study participants living the PG and middle management experience in the ASD project settings, thereby allowing them to interpret the views and experiences of the participants [33]. Case study design was selected because case studies are recommended when prior research is limited and under-researched [7]. In addition, case studies are particularly suited for practitioner-oriented studies aiming to address “practice-based problems where the experiences of the actors are important and the context of action is critical” [7, p. 369], which applies to this study. Multiple-case design provides broader picture of issues in different organisations, which strengthens evidence and generalisability of findings [7]. A case study protocol was used as the agenda for inquiry at each case organisation.

Agile PG is complex and multifaceted in nature given that it involves multiple actors, processes, tools, and socio-technical interactions aimed at achieving project success [23]. Consequently, our study demanded a flexible socio-technical theoretical framework with expansive analytical and interpretive power; activity theory lends itself to these demands [11, 18, 20]. Activity theory was used as the principal theory to develop an Activity-oriented Project Governance (APGov) conceptual framework (Fig. 1) to aid data collection, analysis, and results interpretation. In this present article, we only report on division of labour in relation to the roles of middle managers (MMs) in the agile PG activity. The unit of analysis for this study is the PG activity, which has ASD project as the main governance object, and middle management as one of the activity actors.

Data was collected from two companies between February and March 2020 and it involved 20 semi-structured interviews, three project team meeting observations, company documents, and questionnaires (which were only used to collect qualitative data about the companies and their ASD projects). The interviews, observations, and administering of questionnaires were performed by the first author. The use of semi-structured interviews facilitated information elicitation, interview question adaptation, and further probing, which helped to obtain first-level constructs (facts) and interesting insights from participants. Interviewees included three members of SM, ten MMs, and seven members of lower-level workforce (LOW) so as to obtain a variety of perspectives. Interviewees were asked to reflect on past project events. We used observations to complement other data sources and facilitate discovery of occurrences, subtleties, and actions in the cases [7]. For observations, we employed direct non-participant observation approach [9], and took ‘outside observer’ role [33]. Only one company was observed

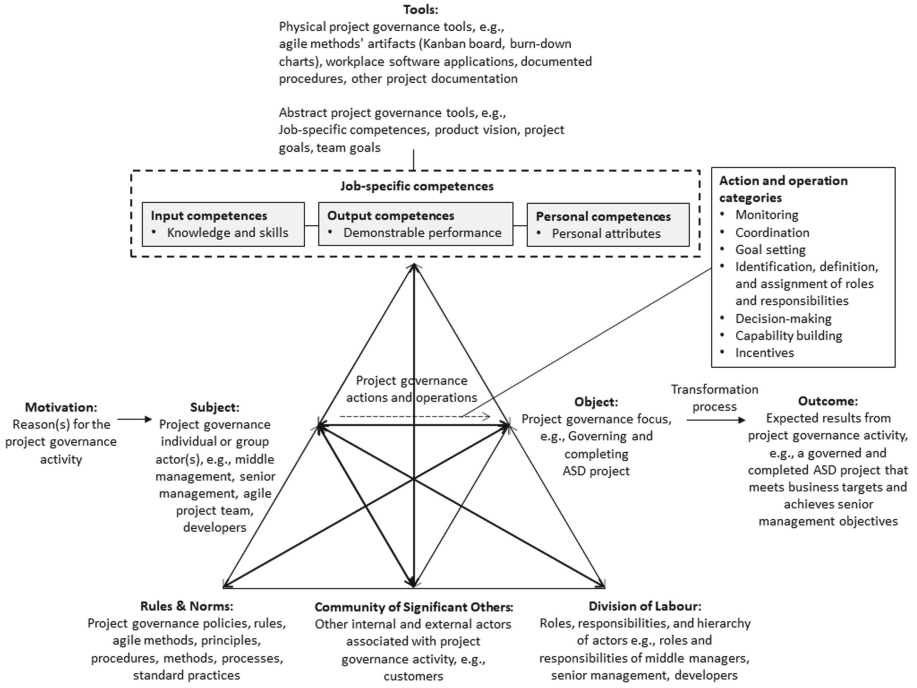


Fig. 1. APGov framework [32]

because the project in the second company was already completed at the time of data collection. Observations in the observed company were limited to three project team meetings due to the COVID-19 outbreak. Use of observations in one company did not affect overall results from both companies: observation data substantiated other collected data. For more sample population details, interview protocol, and other data sources details, visit <https://bit.ly/3uL1Ryl>.

Data analysis was performed using thematic network analysis [3]. A thematic network consists of (a) basic themes, which are the lowest-order premises found in the data, (b) organising themes, which are higher-order themes (categories of grouped basic themes) summarising main discoveries contained in the data [3], and (c) global theme, which is the superordinate theme that encapsulates “the principal metaphors in the data as a whole” [3, p. 389]. Interview transcripts and observation notes were read several times and coded by applying a coding framework comprised of components of the APGov framework, research interests, and emerging discoveries from data [3]. NVivo and Microsoft Word were used to organise text segments into codes, which later formed themes for the construction of a thematic network interpreting various roles of MMs in agile PG. All possible roles of MMs referenced in the raw data were coded. This process produced a total of 40 codes, which were reduced to 25 basic themes (MM roles). The basic themes were grouped into organising themes (role categories)

by considering the MMs' contexts. As a quality check, collected data and analysis findings were shared with participants. Responses were noted and helped clear up misconceptions. Cross-case analysis was done to identify similarities and differences in the MM roles across the two cases. The steps in the analysis process were performed by the first author and checked by the other authors to ensure analysis and interpretations accorded with data and research standards.

Two Nigerian case studies involving a financial technology (fintech) company; HOLDCOY, and a bank; BANKCOY, were undertaken. Both companies were undergoing agile transformation. The Nigerian technology and finance industries were germane for this study due to the use of agile development to create and deploy software solutions for financial services in the region [26]. Brief descriptions of each case organisation will now be given.

HOLDCOY is a Nigerian fintech holding company that was established in 2008. It has five divisions and several functional areas (e.g., Operational Excellence (OpEx) team), which provide shared services to all the divisions. The company has used agile methods to implement and govern software projects for eight years. HOLDCOY's corporate customers include banks and other financial services providers. The research in HOLDCOY was limited to analysis of the PG activity and middle management in one of its divisions: the TECHCOY division, which was the agile project team executing the ASD project under examination. The project entailed development of a software to be used by financial services providers for inter-banking services to their customers and it had been ongoing for two and a half years. The project used Scrum, Kanban and Dynamic Systems Development Method (DSDM) in its delivery with modifications tailored to suit the company. The TECHCOY agile project team performed daily Scrum meetings in weekly/biweekly sprints, sprint planning, sprint reviews, monthly retrospectives, and Monthly Performance Review (MPR) sessions. MPR is used by SM to review, provide feedback, and grade the performance of TECHCOY agile project team as a whole, as well as the performance of the sub-teams. It is also used to set, plan, and continuously review monthly project goals in collaboration with the TECHCOY agile project team. The observed MPR session was attended by SM (led by the Group CEO), TECHCOY agile project team, and other internal stakeholders. The observed daily Scrum and sprint planning meetings were attended by the TECHCOY agile project team members only.

The TECHCOY agile project team was co-located and cross-functional, comprised of 13 persons (ten full-time employees and three interns), which included three MMs: Head of Operations (P1), Head of Technology and Scrum Master (also a senior software developer) (P6), and Head of Business Development (P7). It was led by a divisional CEO (P9), who is not a MM but a member of HOLDCOY's SM team. The agile project team comprised of several sub-teams. Developers in the agile project team were mostly junior-level developers who had limited competency and industry domain knowledge. This was a concern. The developers were not competent to the point where they could perform their tasks unsupervised, hence middle management closely monitored the project (using code reviews for example) to ensure the quality and integrity of software

outputs were not flawed. The agile project team spent project time travelling between their office and customer offices to collaborate with customer teams.

BANKCOY is a Nigerian microfinance bank that has used agile methods for software project implementation and governance for three years. The bank was established in 2008. It implements projects to build software solutions for financial services to customers. The bank has an IT team of 40 staff which provide IT services, including in-house software development. The IT team is led by a Chief Information Officer (CIO) and supported by seven MMs.

The BANKCOY project was an ASD project to build a solution that allows customers transfer funds from other banks to their BANKCOY bank accounts. It was completed in nine weeks in 2019 through monthly sprints. The project used Scrum and Kanban. The agile project team was co-located and cross-functional. It comprised of 12 full-time employees, including six of the seven MMs: Project and Change Coordinator (P11), E-channels Manager (P12), DevOps Lead (also a software developer) (P13), IT Operations Manager (P14), Information Security and Assurance Lead (P16), and Head of Service Delivery (P18). The CIO (P21) is not a MM; he is part of the senior management (SM) team.

The MMs were part of the agile project team in each case. The three MMs in HOLDCOY and six MMs in BANKCOY—all SM direct reports—were the people officially recognised by SM in each company as the MMs in the respective agile project teams based on each company’s organisational structure. For organisational structure diagrams of both cases, visit <https://bit.ly/3uL1Ryl>.

4 Results

Results show that the MMs performed 25 roles in the two cases during the governance of their ASD projects. Comparing and combining the identified themes in the two cases produced a composite thematic network comprised of 25 basic themes that represent the roles MMs performed within the agile PG activity’s division of labour in the two companies (see Fig. 2). The roles were grouped into five organising themes (role categories): *Planning and coordination for project alignment and execution*, *Continuous improvement and organisational change*, *Agile and technical leadership*, *Monitoring*, and *Capability building*, and linked to a global theme - *Roles of middle managers in agile project governance*. Through these roles, the MMs supported their respective agile project teams and contributed towards agile PG practice in their respective ASD projects.

There were similarities and differences regarding the MMs roles we found. We found that of the 25 roles, 24 roles were performed by MMs in HOLDCOY, whereas in BANKCOY 21 roles were performed by the MMs. Four roles in HOLDCOY were not found in BANKCOY, i.e., *Pastoral Care Provider*, *Auxiliary Resource*, *Foreseer*, and *Auditor*. One role in BANKCOY was not found in HOLDCOY, i.e., *Mediator*. Results suggest there were no differences regarding the role categories under which the MM roles were performed in the respective agile PG activities of the two companies. The following subsections and tabular figures describe each role under the five role categories. Results show that a MM

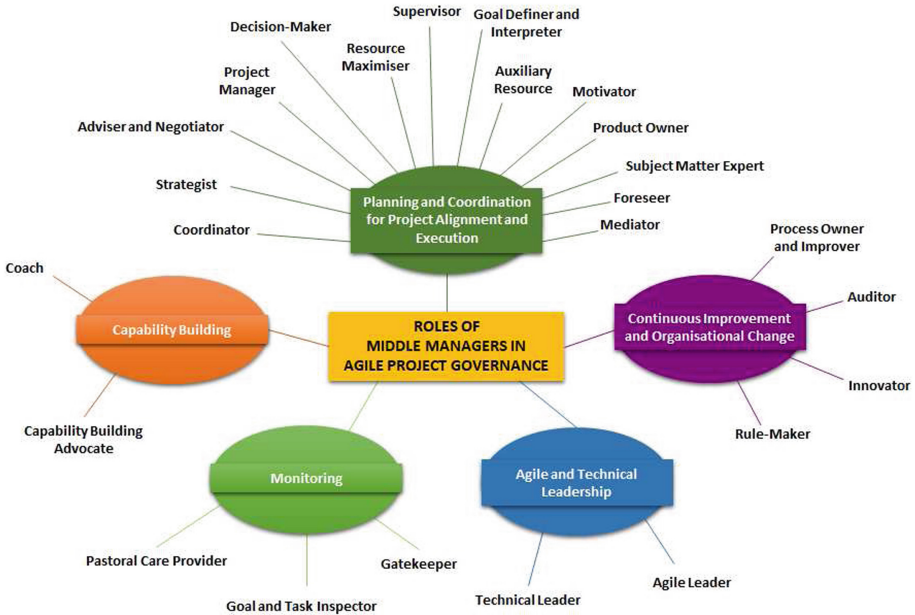


Fig. 2. Thematic network of MM roles in agile PG

can perform one or more of these roles in different instances as circumstances demand during project implementation. Also, more than one MM can take up the various MM roles regardless of job title.

4.1 Planning and Coordination for Project Alignment and Execution

In ASD projects, stakeholders need to work together in order to be successful and accomplish project tasks and goals. Planning, coordination, and maintaining alignment between and with stakeholders, timelines, and business strategy throughout project delivery are important for project success. MMs supported these practices through several roles described in Fig. 3.

4.2 Continuous Improvement and Organisational Change

The MMs engaged in continuous improvement efforts to improve working processes and support team productivity. These efforts tended to result in organisational changes. They engaged in such efforts by performing *Process Owner and Improver*, *Auditor*, *Innovator*, and *Rule-maker* roles (see Fig. 4).

4.3 Agile and Technical Leadership

ASD projects involve developing software solutions following a set of work rules, principles, values, and technical activities to decompose and accomplish solution

Middle Manager Role	Description
Coordinator	As <i>Coordinators</i> , MMs in both cases coordinated project work and stakeholder collaboration in a harmonious manner through agile delivery. They communicated progress and situational reports to SM and other stakeholders, acting as intermediaries between their agile teams and other stakeholders (e.g., other internal teams, external customers, and vendors) so as to advance project work in accord with set timelines. For example, P1 arranged for his team's offsite work at bank (customer) locations.
Strategist	As <i>Strategists</i> , MMs in both cases engaged in strategic practices to devise ways to accomplish project goals and expectations. They helped to ensure (a) project needs and challenges were being handled (e.g., resource planning, specific project solutions), and (b) there was an alignment between business strategy and project delivery to achieve set goals. P1 engaged in strategic project management and planning to ensure his teammates remained dedicated and committed while leveraging agile delivery as a key planning and execution strategy to meet early go live expectation. P1 said: " <i>I find every strategic way to ensure that we achieve this go live at the shortest time possible through incremental delivery, which the agile process, which the agile methodology gives us the permission to do... I do that strategic project management, strategic planning to ensure that, and to ensure that the resources, everybody is up and like dedicated and committed to ensure that we achieve this</i> ".
Adviser and Negotiator	In performing the role of <i>Adviser and Negotiator</i> , middle management advised project stakeholders (e.g., SM) on PG rules and practices which needed to be followed to safeguard project outputs, using their experiential knowledge. Middle management also negotiated project adjustments and timelines to ensure PG policies and processes were followed.
Project Manager	As <i>Project Managers</i> , MMs oversaw the project management function in the ASD project teams. The project manager role entailed engaging team members to ascertain work progress and project issues, and ensuring team members provided regular reporting and feedback regarding status of their assigned tasks.
Decision-Maker	MMs were <i>Decision-makers</i> in the two cases. They contributed to key decision-making in the agile project teams (e.g., decisions as to technical work, product roadmap, staff promotion, process modification, and timelines) so as to advance project delivery and encourage shared autonomous decision-making in the teams. P3 (Product Enhancement Developer, LOW) commented: " <i>they [MMs] are the key decision-makers, like the team key decision-makers, but then, of course, they don't make decisions on their own, they seek like opinions from the team members to know if these decisions are favorable</i> ".
Resource Maximiser	MMs performed <i>Resource Maximiser</i> role in the two cases by managing resource shortfalls in the agile project teams and utilising available team members to relieve people that were inundated with project tasks and filling responsibilities of missing project roles by distributing unattended and outstanding tasks to those available so as to maintain unhindered project delivery.
Supervisor	In performing the role of <i>Supervisor</i> , middle management in both cases oversaw project work and the performance of the agile project teams by working closely with team members and following up with assigned tasks to ensure project work was progressing and completed as expected without hindrance.
Goal Definer and Interpreter	As <i>Goal Definer and Interpreters</i> , the MMs in both cases contributed to defining and interpreting project goals and requirements (such as those emerging from customer or SM interactions), which were broken down and explained so that team members and other stakeholders could understand what needed to be done and why such goals should be achieved.
Auxiliary Resource	In HOLDCOY, middle management served as <i>Auxiliary Resources</i> . They acted as additional support to fill resource gaps in the agile team by taking up other roles and duties when people were lacking, thereby helping to prevent lapses that may adversely affect team productivity and project delivery.
Motivator	As <i>Motivators</i> , MMs in each case motivated their teams by inspiring, encouraging, and influencing team members for successful project execution. MMs (e.g., P11) motivated by inspiring and trusting other teammates, and giving them autonomy by allowing them contribute to making project-related choices so that the team could achieve shared success. P1 motivated teammates by providing incentives, such as supporting staff recognition and promotion for good performance. P7 was involved in organising team bonding activities to keep team members motivated, relaxed, and reinvigorated to tackle project commitments.
Product Owner	MMs were the <i>Product Owners</i> in the two cases. They were accountable for maximising value by prioritising requirements, tasks, and releases in collaboration with other project stakeholders so that most valuable requirements were completed first. P1 was the product owner in HOLDCOY, while P12 was the product owner in BANKCOY. P1 represented project stakeholders (e.g., customers) to ensure his team worked with the needs of stakeholders in mind, thereby ensuring continuous alignment between team outputs and stakeholder expectations during project execution. P1 along with P6 and P7 engaged in developing product vision through product and project road mapping jointly with SM (P9). P1 and P6 managed the backlog.
Subject Matter Expert	As <i>Subject Matter Experts</i> , MMs provided input and expertise on technical and non-technical aspects of the ASD projects in the two cases: technical development (P6 and P13), IT networking (P1), industry domain expertise (P1, P6 and P7), and project work and status information, based on their advanced knowledge, experience or both for successful project delivery.
Foreseer	In HOLDCOY, MMs acted as <i>Foreseers</i> . They could see the bigger picture and foresee issues that might affect project delivery. P1 said: " <i>I know what a delay, what a delay can cause and how a delay can affect things. So, I always look at the bigger picture... when you look at the bigger picture you know that a delay can cause a very long, a very long issue at the end of the day</i> ".
Mediator	In BANKCOY, P12 acted as a <i>Mediator</i> . He intervened as a middleman to help resolve a conflict between warring members of the agile project team by helping to bring about a settlement.

Fig. 3. Planning and coordination for project alignment and execution MM roles

requirements in iterations and increments so as to quickly release good-quality software that meet stakeholder expectations. In the two cases, middle management led the respective ASD teams as *Agile Leaders* and *Technical Leaders*.

As *Agile Leaders*, middle management ensured the agile project teams implemented their projects in accord with the agile approach (P1, P6, and P11). They helped to keep the agile project teams current regarding technologies they adopted for project delivery by showing interest in technology trends and keeping up to date with technologies being used in industry (P6 and P18). They encour-

Middle Manager Role	Description
Process Owner and Improver	MMs were <i>Process Owner and Improvers</i> in the two projects. They were accountable for implementation of prescribed PG processes and procedures in the ASD projects. Middle management facilitated retrospectives (P1), as well as process and procedural changes (P14 and P18) for continuous improvement, ensuring inefficiencies and areas for improvement in PG processes and procedures were identified and addressed in collaboration with other stakeholders. P1 collaborated with the HOLDCOY OpEx team (which was responsible for documenting PG policies and processes, and monitoring company-wide compliance) to ensure PG policies and processes were always appropriate for the agile project team's day-to-day project work. P1 also ensured his agile team complied with PG processes and rules to avoid penalties due to noncompliance.
Auditor	In HOLDCOY, P8; an external MM to the agile project team, acted as <i>Auditor</i> . P8 was the OpEx team's manager. P8 and OpEx team performed process and function audits to identify gaps and areas to improve in PG processes and policies for continuous improvement in order to support each function and project work. P8 commented: <i>"what we do currently is on a monthly basis also we do like a process audit for each function... in each of our policies that governed the activities performed by any resource, we have what we call effectiveness criteria where we test the effectiveness of the person carrying out this..., a particular activity right. We identify gaps, things that we need to..., that we need to improve upon in the activity or in the process"</i> .
Innovator	As <i>Innovators</i> , MMs in both cases fostered innovation and change to improve PG practice in the ASD projects so that the teams could implement the projects more efficiently to achieve expectations. MMs were involved in recommending and introducing new ideas, practices and technological tools to improve and advance project delivery. In HOLDCOY, P3 said: <i>"the CTO [Head of Technology and Scrum Master] and the COO [Head of Operations] they are actively involved in determining who does what and then how it's being done, the technological tools to be used like I explained earlier. So, they play a very important role in that, and then if at any point in time the tools you are making use of, the technologies are not better or there is a better option, they are the ones that suggest that 'Okay, try out these better options'"</i> .
Rule-Maker	The MMs acted as <i>Rule-makers</i> . They formulated, introduced, and enforced PG rules and policies (e.g., customer collaboration rule, testing policy, information security standards) that helped the agile project teams to work in compliance with prescribed governance measures. P2 commented: <i>"on a Monday morning, you don't want to go to the bank and run an implementation on a Monday morning. They [banks] also have what they are also trying to achieve in the banks. So on Mondays and mostly Fridays we don't go to banks, so they [MMs] are the ones that came up with that"</i> . P8 commented: <i>"I'm in charge of formulating the policy that govern that activity of testing"</i> . Middle management also maintained custody of PG policies: <i>"I'm a custodian of policies: [TECHCOY] policies and policies that govern what a function does, the activities a function performs" (P8)</i> .

Fig. 4. Continuous improvement and organisational change MM roles

aged shared decision-making (P6 and P11). P6 exercised business sense through his appreciation and understanding of the business opportunities associated with the ASD project, thereby helping to bring clarity of such opportunities to the agile project team—opportunities for the company to quickly introduce a new product to customers through agile delivery and gain advantage over competitors. P1 helped his team to maintain agility by adapting weekly work approaches when necessary to ensure the team achieved project goals. The MMs engaged team members with a listening ear and emotional intelligence to ascertain work situations and personal issues that might affect project delivery (P1 and P6).

As *Technical Leaders*, MMs (P6 and P13) provided technical leadership by leading software development in the projects, supporting the agile teams with advanced technical expertise and hands-on support. P6 ensured work completed by developers were within project scope and aligned with project expectations. He ensured technology requirements to accomplish the project were identified and provisioned, ensuring that all necessary technical considerations for development were made in order to achieve expected results. P13 ensured alignment between BANKCOY and external vendor technical specifications for their project.

4.4 Monitoring

The MMs monitored project work and team members' performance in the PG activity as *Gatekeepers*, *Goal and Task Inspectors*, and *Pastoral Care Providers* to ensure the agile project team members accomplished assigned project tasks and goals as required with healthy state of mind (see Fig. 5).

Middle Manager Role	Description
Gatekeeper	As <i>Gatekeepers</i> , MMs regulated PG interactions and procedures employed by the agile teams for project delivery, performing gatekeeping checks and controlling access from one state of project work to another to ensure conformity to accepted work standards, such as during code reviews where a developer could be asked to refactor suboptimal coding (P6). MMs represented a single point of accountability and oversight in the agile teams. They had access to authority (established by SM mandate) and resources necessary to realise project expectations: they 'owned' the projects. P9 said: " <i>the middle managers are the owners of the project. It's their project right and they have to ensure that the project is delivered as expected. Now what that means is that they have to consciously ensure that those governance practices are adhered to</i> ".
Goal and Task Inspector	MMs were <i>Goal and Task Inspectors</i> . They tracked and inspected goals and tasks that their teammates and other project stakeholders were expected to complete. In both cases, middle management monitored tasks and dependencies. Middle management (e.g., P1) followed up and sent reminders to teammates to act on their assigned project tasks, and at the same time verified tasks that teammates were completing to ensure set goals were being achieved. P2 (App Support Developer, LOW) said: " <i>they [MMs] have the outline of the goals that we're supposed to achieve, so, and they are monitoring, they are following up on those things, "Oh this, has it been done?" Whenever it's being tested they want to see it, not just that you say it's done, it's done, no. They come up and see it... they're able to monitor the progress of the project</i> ".
Pastoral Care Provider	As <i>Pastoral Care Provider</i> , P1 monitored the emotional state of the agile team with empathy and emotional intelligence. P1 interacted with teammates at a personal level to identify personal or work-related issues that were affecting their performance and provided pastoral care support accordingly (e.g., arranging necessary training to address capability needs). In doing so, middle management was helping to promote psychological safety and stability in the team by ensuring that team members were not overwhelmed by issues that could affect their ability to focus on their project work and accomplish project tasks.

Fig. 5. Monitoring MM roles

4.5 Capability Building

MMs were found to contribute towards the capability building and competence development of members of the agile project teams in the two cases. They did so by assuming the *Capability Building Advocate* and *Coach* roles (see Fig. 6).

Middle Manager Role	Description
Capability Building Advocate	As <i>Capability Building Advocates</i> , MMs engaged in and encouraged capability building to ensure the teams were equipped with requisite knowledge and skills to enable them work effectively in cross-functional capacities and accomplish their project tasks. MMs encouraged training, knowledge sharing, and learning. In HOLDCOY, the MMs ensured product enhancement developers had the capability to take up the system integrator's development work whenever the latter was unavailable, and vice versa. P6 championed regular knowledge exchange sessions with other developers and also ensured backup resources in the team developed needed capabilities to fill any resource gaps in the team and minimise key person risk. In BANKCOY, P13 encouraged teammates to learn a legacy technology being used by their external vendor's team in order to deliver on the project.
Coach	MMs performed the role of <i>Coach</i> in the two companies by providing assistance, training, and guidance to project team members while allowing them take ownership of assigned project work. They ensured the teams possessed requisite knowledge, skills and capabilities to accomplish project tasks and meet project needs. In BANKCOY, P16 organised in-house training and educated the team on information security aspects relating to their ASD project, hence building the capacity of the team. In HOLDCOY, MMs (e.g., P1) trained team members on the use of Jira and new software that were introduced to the team. Middle management also assigned targets and minor tasks to team members for their practice, learning, and capability building so as to build team capabilities for completing project work (e.g., asking the developers to complete a demo project).

Fig. 6. Capability building MM roles

5 Discussion

We have undertaken a multiple-case study to answer the question - *What are the roles of middle managers in agile project governance?* The previous section described results from two cases, which suggest that MMs performed 25 pivotal roles in agile PG. This section will discuss findings in light of related work.

Comparing our model with the agile PG framework in Lappi et al. [23], the MM roles and categories are represented in the six dimensions, albeit not in the same grouping; for instance, coordination (e.g., coordinator), capability building

(e.g., coach), monitoring (e.g., goal and task inspector), goal setting (e.g., goal definer and interpreter), roles and decision-making power (e.g., decision-maker), and incentives (e.g., motivator). Our agile and technical leadership category fits into the roles and decision-making power dimension, in which Lappi et al. [23] highlights the adaptive nature of leadership provided by an agile project manager which is needed to handle seemingly increasing workload due to risks and greater coordination needs in autonomous teams. As an adaptive leader, the project manager also serves as coordinator or administrator for the agile project team [23]. This role interchange behaviour is similar to that of MMs in our study.

Regarding continuous improvement and organisational change in our cases, MMs facilitate innovation, rule-making, auditing, process and procedural changes, and retrospectives. These mechanisms allow the project teams to review and reflect on how they operate and devise and implement improvements and strategies to address inefficiencies in their work processes, thus affecting not only their projects, but also PG practice in the organisations as a whole. Our MMs roles highlight the pertinence of continuous improvement and organisational change to agile PG. While Lappi et al. [23] categorises retrospectives as a mechanism within the coordination dimension, our study posits continuous improvement and organisational change as a possible dimension of agile PG warranting further research. A hallmark of agility is the continuous affinity for and responsiveness to change [10]. This should also reflect in the way agile PG is exercised. From our study, MMs facilitate continuous improvement [15] and change [1, 5], hence contributing to a culture of PG in ASD projects that is not rigid and static, but one that is dynamic and mutative: constantly evolving so as to remain effective.

From our study, middle managers (MMs) tend to switch between roles to cater for project needs that are occasioned by project events. There can be one or more MMs performing the same middle management role regardless of their job titles, which is how agile managers tend to operate in agile projects [30]. This dynamic, instantaneous, and transitory nature of the MM roles in agile teams during agile PG is characteristic of roles found in self-organised teams [17].

Gatekeepers, such as the MMs in our cases, are viewed as “organizational actors that sit at the junction of a number of communication channels in such a way that they can regulate the flow of demands and potentially control decision outcomes” [14, p. 11]. Hence, a gatekeeper is essentially an entity that controls ‘who’ or ‘what’ is given access to something, or one that controls the advancement of a thing from a particular state or condition to another. In Russo [29, p. 30], the MMs (Scrum masters and product owners) were collectively designated the “gatekeepers between the top management directions and the implementation efforts”. The Scrum masters in particular “acted as gatekeepers, focusing on Agile values” [29, p. 29], which is related to the *Agile Leader* MM role in our study and the agile manager mentor role in Shastri et al. [30] in that the three roles ensure project delivery follows the agile approach. The Scrum masters were also domain experts [29], similar to our *Subject Matter Expert* role. The

product owners represented stakeholders and ensured software outputs matched user expectations [29]. This is similar to our *Product Owner* role.

In our study, middle management as a collective ‘owned’ the projects and acted as single point of accountability and oversight, ensuring tasks were completed by the right people to achieve stakeholder expectations and best project outcomes. This is closely related to the ‘single point of accountability’ PG function in agile settings [25]. Moran [25] argues that ultimately, any agile undertaking (e.g., project) must be traced back to a single person who has access to the necessary resources and authority to direct activities and can be held accountable for performance and outcomes. Despite being project owners by SM mandate, the MMs worked alongside their teammates with a shared project ownership and team autonomy mindset. For example, P1 believed that for their agile project to succeed, each person in the agile team had to own the project, as well as own their respective project tasks: “*the only way an agile project can succeed is if your team members actually own this project and own each task*” (P1).

As *Strategists*, the MMs contributed to strategy making and implementation efforts within the two companies, as in Balogun [5], which argues that MMs are enabling and influential in defining and implementing strategy in organisations due to their intermediary position. This also links with the *Coordinator* role in our work in that MMs are intermediaries. As *Coordinators*, the MMs in our study coordinated the agile teams’ interactions with internal and external stakeholders for optimal collaboration to achieve shared project goals. This is similar to an aspect of the agile manager coordinator role in Shastri et al. [30], where the agile manager coordinates team collaboration with customers and specialists, as well as collaboration within and between teams. The boundary spanning position of the MMs in our study gives them access to knowledge from across intra- and inter-organisational boundaries, thus providing substantial intelligence for generating and implementing useful ideas. Projects are apparatus in organisations that enable transformation of business ideas and strategies into achieved goals. In agile settings, weak strategic connections between organisations and their projects is a PG issue [23]. Our study suggests the strategic and coordination agency of MMs may potentially help strengthen organisation-project strategic connections in agile settings considering middle management’s frequent participation in strategic and technical-operational multistakeholder exchanges.

A few other MM roles we found match other findings in Shastri et al. [30]. For example, in our *Coach* role, MMs train teammates on new software tools for project work. They provide guidance and assistance while allowing teammates to own their project tasks. The MMs also assign minor tasks to teammates to build their know-how and aid their growth. This is on par with the coaching aspect of the mentor role in [30], which entails guiding and assisting teammates to complete tasks, and aiding their growth by giving them minor tasks to complete. The mentor role also builds team relations using different means, including organising team bonding activities. This is close to our *Motivator* role whereby MMs support and organise team bonding activities to inspire teammates. It is, therefore, noteworthy that as multirole actors, MMs are vital to ASD projects

and teams. Our study and other recent studies [1,15,29] call attention to the relevance and evident potential of MMs in present-day agility landscape.

As for limitations, we acknowledge our study involved a short period of field-work. This was due to COVID-19 pandemic. Still, useful data was collected leading to the discovery of 25 roles of MMs in agile PG. The nature of qualitative studies is subjective, however, our use of multiple data sources for corroboration strengthens validity of findings. The two case studies are limited to companies in Nigeria and the finance industry. The finance industry is an intensely regulated industry. The sensitive nature of business activities in such industry may demand a certain degree of oversight and control, which may influence how governance is performed and how MMs operate in ASD projects within such contexts. The small number of companies involved may limit generalisability of findings to our two cases. Nonetheless, the companies we studied are representative of companies that use agile approaches, hence companies with like contexts, structures, and projects may derive instructive insights from our research.

6 Conclusion and Future Work

Our study suggests that MMs are important to agile PG. As conspicuous and influential actors in agile teams, MMs perform a variety of pivotal roles through which they contribute to agile PG practice and support the effectual functioning of agile teams, thereby helping to accomplish mandated ASD projects.

This study has developed a thematic model of MMs' roles in agile PG that describes multiple roles, which MMs can perform when working alongside agile teams and governing ASD projects. It contributes to the 'middle management in agile' debate in hopes of prompting scholarly discussions on the topic. It contributes to filling a gap in knowledge as to the spectrum of middle management involvement and impact in agile PG and agile teams by offering alternate, clarifying, and optimistic views about the middle management role. It adds to studies on agile PG and MMs in ASD projects, which are limited. The study exemplifies the use of activity theory in agile PG research through its application of the APGov framework, and advances the use of activity theory in ASD research.

Organisations that use agile methods and have MMs may use the model of MMs' roles as a tool for (a) creating job descriptions and person specifications for recruitment of MMs, (b) education and training for continuing professional development of MMs and aspiring MMs, and (c) ensuring MMs maintain acceptable levels of job performance in the governance of ASD projects. The model should help MMs, SM teams, aspiring MMs, agile teams, and researchers to better understand the roles of MMs in agile PG practice, which may lead to stronger organisation-project strategic connections and project success, as well as foster organisational agility, better working relationships between MMs and their teammates in agile project teams, and further research. We encourage SM teams to involve agile MMs in strategic exchanges as they may possess unique technical-operational knowledge and insights regarding project work and complexities on the ground. Participation of MMs in strategic exchanges with SM can

reinforce project teams' commitment, dedication, and ownership of ASD projects to ensure mission-critical initiatives are realised with short time to value.

Future work should further explore continuous improvement and organisational change as a PG dimension in ASD projects. Also, the roles of MMs in PG within additional ASD projects in finance, other industries, and other countries should be examined—with larger sample size—to validate, generalise, or build upon our findings. To further validate our findings, quantitative research is also suggested (e.g., determine the relative importance of the MM roles in agile PG).

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