Inter-functional Coordination as a Pathway between Servant Leadership and the Implementation of TQM Practices

Desalegn Urgessa Yadeta[1*], Matiwos Ensermu Jaleta[2], Mesfin Workineh Melese[3]

[1]Department of Management, Kotebe University of Education, Addis Ababa City Administration, Ethiopia
[2]Department of Logistics and Supply Chain Management, Addis Ababa University, Addis Ababa City Administration, Ethiopia
[3]Department of Marketing Management, Addis Ababa University, Addis Ababa City Administration, Ethiopia

ABSTRACT

Despite increasing studies on the importance of servant leadership as a fundamental contextual factor determining the implementation of TQM practices, recent studies have not thoroughly investigated the mechanisms that link servant leadership to implementing customer focus, people management, process management, strategic planning, information, and analysis. Hence, the main purpose of this study is to explore the role of servant leadership in the implementation of the five TQM practices and showcase whether inter-functional coordination mediates the link between servant leadership and these TQM practices. We surveyed 203 leaders in 104 firms located in Finfinne/Addis Ababa and surrounding cities to investigate the mediating roles of inter-functional coordination in the relationship between servant leadership and the implementation of customer focus, people management, process management, strategic planning, information, and analysis. To achieve this aim, we tested a structural model through an empirical investigation with SEM and bootstrapping methods. The results indicated that servant leadership was directly and positively related to implementing TQM practices. Furthermore, results showed that inter-functional coordination positively and partially mediated the relationship between servant leadership and the five TQM practices. These findings add to the literature by illuminating why servant leadership is positively associated with TQM practices.

TQM is holistic management philosophy embracing a wide range of practices and principles(e.g., strategic planning, people management, customer focus, process management, information, and analysis) (Pereira-Moliner et al., 2016; Samson & Terziovski, 1999). Despite the importance of the dimensions of TQM for the development of competitiveness by service and manufacturing organizations, the majority of studies in this area have analyzed TQM as a global construct (Fotopoulos & Psomas, 2009; Samat et al., 2006), with studies focused on TQM dimensions being almost non-existent except (Kumar & Sharma, 2018). Stated differently, very few studies have emerged probing the main antecedents of the implementation of TQM practices. Consequently, contrary to those studies that have looked at the determinants of TQM as a global construct, we highlight the interest in investigating the direct and indirect effect of servant leadership on TQM practices/dimensions. Furthermore, research on TQM practices has focused mainly on organizational outcomes including customer satisfaction, firm performance, and competitive advantage (Fotopoulos & Psomas, 2009; Jabnoun & Sedrani, 2005; Samat et al., 2006; Wang et al., 2021). However, most recently, numerous studies have been arising, proposing important areas of progress in this field, to investigate the factors that determine effective implementation of TQM practice (Kumar & Sharma, 2018). Under this suggestion, we took the initiative to examine the effect of servant leadership on the implementation of TQM practices through inter-functional coordination.

   Given the significance of implementing customer focus, people management, process management, strategic planning, information, and analysis for firms' competitiveness and performance, understanding how managers can influence these implementations is becoming increasingly important. It has been argued that leadership is important to adopt and implement certain organizational practices as reflected by developing multiple sources of influence, developing trust, maintaining consistency between words and actions, and sustaining the course of change through the inspiration and enthusiasm of employees (Gilley et al., 2009; Levene & Higgs, 2018). In this regard, servant leadership continues to attract scholarly and practitioner attention. Servant leadership has been defined variously as. For instance, Reinke (2004) defined a servant leader as"...one who is committed to the growth of both the individual, and the organization, and who works to build community within organizations" (p. 33). Servant leadership sees employee growth and organizational effectiveness as symbiotic manifestations of the same pursuit. Servant leaders achieve the long-term goals of organizations by primarily improving the well-being, and development of followers (Hoch et al., 2016). Stated differently, servant leadership refers to forming relationships, empowering, helping followers grow and succeed, and putting them first in addition to behaving ethically, demonstrating conceptual skills, and creating value for the outsiders to increase their commitment and perform beyond the expectations indicated in job descriptions (Dierendonck, 2011; Spears, 2002). Particularly, the plausibility of a conceptual relationship between servant leadership and the implementation of customer focus, people management, process management, strategic planning, information, and analysis is further enhanced when one notices that servant leadership directly affects those factors crucial for the implementation of TQM practices.

   Inter-functional coordination is the intra-organizational and inter-functional interaction that makes consistent objectives by making the extra effort to solve incompatibilities in interests

and objectives between functional units. According to Miles et al. (1978), the degree to which organizations create synchronization relies on how actions taken in one organizational unit align with the other functional unit. The effectiveness of the implementation of TQM practices is largely explained by the synchronization of the different functional units including product development, production, and marketing (Rehman & Jajja, 2022). Despite the importance of inter-functional coordination as the fundamental cultural capability and strategic resource of the firms in today's high demand of the environment and the implementation of any change initiatives including TQM practices, there is hardly any research that examines the role of inter-functional coordination as a pathway through which servant leadership influences TQM practices.

This research contributes to the relevance of inter-functional coordination to explain the mechanisms servant leadership uses to influence the effective implementation of customer focus, people management, process management, strategic planning, information, and analysis. In addition, we provide a solid theoretical and empirical foundation for the multidimensional approach to TQM, differentiating and specifically addressing the mediating role of inter-functional coordination between servant leadership and the five TQM practices to elucidate further their effects.

This paper is structured as follows. We first compose and critically discuss the theoretical literature on servant leadership and the five TQM practices. Then, we discuss the method used and provide the results obtained. Lastly, we address the discussion and conclusions in terms of theoretical, practical, and future research implications.

Literature Review and Hypothesis Development
Total Quality Management(TQM) Practices

The philosophy underlying the practices of TQM is to see customers as central to firm success. Firms with TQM strategy notice their business through their client's eyes and then evaluate their success against the expectation of the customers, not through the firm's expectations (Igbaekemen, 2014). TQM practices are the major and critical success factors to warranty the execution of TQM though there is no agreement yet about these practices. In line with the aforementioned truth, different TQM frameworks were developed empirically (Pradhan, 2017; Samson & Terziovski, 1999; Zhang et al., 2000). The different TQM frameworks are analyzed in Table 1.

Table1

Alternative TQM Framework

S.No	TQM framework	TQM Practices
1	Arditi & Gunaydin (1997)	Management commitment/leadership, teamwork, supplier involvement, cost of quality, customer service, statistical methods, and training.
2	Thamizhmanii & Hasan (2010)	Leadership commitment, employee involvement, and empowerment, continuous improvement, total customer satisfaction, training and education, ownership, reward, and recognition, cooperation, and team work, and prevention of error.
3	Deming's fourteen points (Powell, 1995)	Constancy of purpose, adopting the philosophy, not to relay on mass inspection, constant improvement, training, leadership, driving out fear, breaking down barriers, eliminating slogans, and exhortations, eliminating quotas, pride of workmanship, education and retraining, and plan of action.
4	Juran Trilogy (Powell, 1995)	Quality planning, quality control, and quality improvement.
5	Crosby's fourteen quality steps (Powell, 1995)	Management commitment, quality improvement teams, quality measurement, cost of quality evaluation, quality awareness, corrective action, zero defects committee, supervisor training, zero defects day, goal setting, error cause removal, recognition, quality councils, and do it over again
6	The 1992 Baldrige Award criteria (Powell, 1995)	Leadership, information, and analysis, strategic quality planning, human resource development, and management, management of process quality, quality, and operational results, customer focus, and satisfaction
7	Powell (1995)	Committed leadership, adoption, and communication of TQM, closer customer relationships, closer supplier relationships, benchmarking, increased training, open organization, employee empowerment, zero defects mentality, flexible manufacturing, process improvement, and measurement.
8	Fotopoulos & Psomas (2009)	Leadership, strategic quality planning, employee management, and involvement, supplier management, customer focus, process management, continuous improvement, information and analysis; and Knowledge, and education
9	The quality award model of Ethiopia (Birhanu & Daniel, 2014)	Leadership, policy and strategy, resource management, processes, customer focus, impact on society and business performance

To select TQM practices for this study, the researcher based on the aforementioned literature. In this sense, this study considered the following five TQM practices, including 1) strategic planning; 2) people management; 3) customer focus; 4) process management; and 5) information and analysis (Samson & Terziovski, 1999). This TQM model was developed based on the most universal and pervasive method known as MBNQA (Samson & Terziovski, 1999) as the Ethiopian TQM framework is similar to MBNQA, and no instrument is not yet developed.

Strategic Planning: The main issue addressed in this category is the strategy of the organization, business planning, and execution of plans, along with the organization's focus on customer needs and operational performance, and goal achievement. The strategic planning element of TQM looks at how a company positions strategic directions, ascertains a lasting vision and missions, builds up the values essential for lasting accomplishment, communicates them throughout the organization, develops strategic objectives and goals, integrates quality policies in the strategic objectives, and goals, and executes these through proper policies, strategies, and action plans (Mosadeghrad, 2015; Siam et al., 2012). The strategic plan should focus on quality needs, clearly define management's commitment to quality (e.g., in terms of meetings, pieces of training, and personal contact), and state the relationship between the company and the customer (Lakhe & Mohanty, 1994). The requirements of internal and external customers need to be integrated into the strategic plan

(Lakhe & Mohanty, 1994). Moreover, writers and researchers heavily focused on the importance of strategic plans. Long-term strategic planning fosters the successful practices of TQM (Rad, 2006). He added that "strategic problems were important barriers to TQM success. These barriers included lack of planning and long-term policies, lack of mechanisms for strategy formulation, non-clarity of objectives, inflexibility of an organization toward the environment, and technology change…" (p. 12). A strategic plan ensures the accessibility of resources for quality management implementation. It helps recognize customers' and employees' requirements and develop strategies, and action plans to attain the goals and objectives (Mosadeghrad, 2015).

People Management: People management addresses the extent of employee competency, commitment, involvement, and empowerment in TQM (Mosadeghrad, 2015); it also addresses issues like employee flexibility and responsibility through involvement and empowerment, measuring employee satisfaction, and being concerned about the health and safety of employees. According to Samson and Terziovski (1999), people management addresses "how well the human resource practices tie into and are aligned with the organization's strategic directions" (p. 396). How well employee health, safety, training, development, involvement, and empowerment are integrated are all addressed within the concept of people management in the context of TQM**.**

One aspect of people management in the context of TQM is the training of its employees (Samson & Terziovski, 1999). It has a significant impact on awareness, attitude, and behavioral consequences. Unless employees understand how to execute TQM principles, concepts, and practices, they may lack change commitment, and resist it instead of offering beneficial input (Kim et al., 2012). According to Reed et al. (2000), neither employees nor managers are omniscient, so they need to be trained and educated about quality concepts, tools, and techniques. Sosik et al. (2005) also stressed the role of employees in terms of bringing their own set of abilities, skills, and knowledge which influence self-awareness, effective communications, self-motivation, problem-solving skills, and knowledge of technology. These qualities are significant because they facilitate employees to interact with business partners, suppliers, customers, and each other and ultimately result in conducting profitable business. Moreover, Reed et al. (2000) contend that training and education involve communicating TQM philosophy in addition to equipping people with the necessary skills that assist them in producing quality products. They also conclude that training and education have the potential to create a competitive advantage by reducing the chance of imitation. Aligning training and development programs in a strategic plan could increase its effectiveness and facilitate the support needed. Organizations should proactively respond to the changes that occur due to the constant state of flux in the organization's environment by producing versatile employees through continuous training and education (Arditi & Gunaydin, 1997; Gallear & Ghobadian, 2004).

Organizations, which are the most effective, facilitate employee development into leaders and view them as strategic resources to meet strategic plans and strategic quality goals mentioned in strategic planning, and strategic quality plans. Firms commit significant resources to supporting and developing employees (Zhang et al., 2000). Organizations continually nurture their employees' abilities, skills, and knowledge through learning programs, delegation, and mentoring. Jarrar and Aspinwall (1999) stressed that "without

altering human knowledge, skill and behavior change in technology, processes, and structures is unlikely to yield long-term benefits". All organizational members, from the top management down to the shop floor employees, should be trained continuously to understand the philosophy of TQM, how TQM strategies are integrated into the strategy of the organization, and to successfully execute TQM strategy and as the source for future success (Jarrar & Aspinwall, 1999). Furthermore, training and education create an opportunity to induce positive culture, continuous learning, and improvement that guarantee a TQM climate to be continuous and sustainable (Rad, 2006; Yukl, 2013).

The second aspect of people management in the context of TQM is two-way communication, employee flexibility, and taking responsibility for the quality of their work (Samson & Terziovski, 1999), which are explicitly explained in terms of employee involvement and empowerment (Zhang et al., 2000). By participating, members enlarge their self-respect, personal abilities, and commitment to the achievement of their organization (Zhang et al., 2000). According to Thamizhmanii and Hasan (2010), employee involvement refers to "having input" from organizational members on different organizational issues, which may include quality effort. Employee involvement is another critical success factor for TQM. Involvement results in human dignity, self-realization, goal agreement, positive interpersonal relationships, and motivation. Employee involvement and participation are relevant in situations with knowledge-based and complex work (Mikkelsen & Olsen, 2018). According to Gonzalez and Guillen (2002) and Siam et al. (2012), different strategies are used to develop, encourage, and sustain employee involvement, such as communicating organizational goals effectively, using reward systems, and using appropriate leader characteristics (e.g., empathy, attractiveness, vision and uprightness, provision of problem-solving methods, and suggestion system). In the modern business environment, employee job involvement is not only considered as being a work value and a democratic principle but an endeavor that is very important for companies interested in establishing the key capabilities that are important for success in today's complex and volatile market environments (Fjeldstad et al., 2012 as cited by Mikkelsen & Olsen, 2018). Likewise, empowerment refers to "engaging employees in the thinking processes of an organization or having an input that is heard and seriously considered". Empowerment encourages improvement in participation and implementation (Thamizhmanii & Hasan, 2010). Ghobadian et al. (2007) argue that "employees are allowed to take initiative and participate in the decision-making processes directly relevant to them, and as such, deviation from tightly defined rules does not result in sanctions provided that there is no transgression against the organizational values" (p. 7). The authority to deal with problems and decision-making should be delegated to teams and individuals rather than dictating everything in detail. Employees and teams should be empowered to support new programs and implement a new strategy. Empowerment minimizes constraints(e.g., bureaucracy) that impede and increases resource supply that facilitates change efforts (Yukl, 2013). Empowerment supported by training can develop employee willingness to accept change like TQM and enhance their ability to manage change. It helps them develop a positive attitude, understand their responsibilities, motivate others, and create team cohesiveness (Thamizhmanii & Hasan, 2010).

Another feature of people management is the encouragement of involvement in teamwork by building cross-functional teams to solve quality-related issues. Teamwork refers to an

interacting group with small members with mutually supporting roles, common rationale, and balancing skills (Yukl, 2013). Nowadays, performing work requires teamwork, like a building block. Sosik et al. (2005) argue that "promoting collaboration within, and between teams is essential in today's business environment". Teams are responsible for setting shared goals, plans, and controls (Arditi & Gunaydin, 1997). The last important aspect of people management is reward and recognition systems that are correlated to quality implementation, thus inspiring organizational members to back up the organization's quality effort (Zhang et al., 2000).

Customer Focus: The first aspect of customer focus is determining the customer's needs, preferences, and expectations. Customer focus first addresses the company's dedication to recognizing and fulfilling customer needs, favorites, and expectations (Mosadeghrad, 2015). By keeping close relations with customers, companies can identify their current needs, future expectations, and the degree of their fulfillment for the success of an organization (Zhang et al., 2000). Processes and systems should be in place to understand customer needs, preferences, and expectations, translate them into proper organizational requirements, and please them (Mosadeghrad, 2015). The second aspect of customer focus is to address the issue of how organizations create relationships with customers. Customer relation is enhanced by making customer satisfaction part of strategic planning, measuring satisfaction level regularly, designing products based on the expectation of customers, and using technologies to fulfill customer expectations (Lakhe & Mohanty, 1994). Having close contact with customer help to know their needs and gets feedback regarding how far those needs have been met (Zhang et al., 2000). Effective relationships help establish mutual trust by breaking down barriers, facilitating understanding of each other's business constraints, and reversing causes of dissatisfaction into opportunities for mutual benefit (Gallear & Ghobadian, 2004). The third aspect of customer focus is measuring customer level of satisfaction or complaints regularly. Based on feedback received from customers, companies can improve quality (Mosadeghrad, 2015). This implies that firms should treat customer satisfaction and complaints with great precedence, and if required, remedial actions should be taken instantly to guarantee that the organization constantly keeps customers satisfied (Zhang et al., 2000).

Process Management: Process management refers to key processes designed, executed, controlled, and enhanced to support the company's strategic direction and action plans, abundantly please customers, and attain superior performance (Mosadeghrad, 2015; Samson & Terziovski, 1999). Poor quality processes lead to considerable rework and scrap rates, resulting in more resource consumption (Singh & Singh, 2014). Process management helps to build quality into the production or service delivery process to reduce process variation (Singh & Singh, 2014). Reducing process variation results in quality products and services while eliminating unnecessary costs (Singh & Singh, 2014). Effective process management helps to achieve desired quality goals by managing organizational resources and activities as part of a process (Al-Damen, 2017). Organizations must ensure quality at all stages of production and service delivery line as the quality of the previous stage influences the quality of the next stage in the production and service delivery line (Arditi & Gunaydin, 1997). Moreover, the ability to produce a quality product and service largely depends on the relationship between the supplier, the customer, and the processor engaged in the production and service delivery line and the understanding of competitors' operations. Gonzalez and Guillen (2002) and Bin

and Tarí ([2017](#)) claim that the link with suppliers is significant as a sound quality level cannot be provided and maintained if inputs supplied to the organization are of poor quality. Process management also helps to ensure that suppliers use an effective system to ensure the quality of inputs they deliver to the user organization (e.g., taking into account the standards and specifications requirements for inputs) to reduce process variation at the input stage (Bin & Tarí, [2017](#)).

Information and Analysis: Organizations manage the process well using reliable information and analysis to achieve performance and quality goals (Tummala, [1996](#)). Information and analysis from the TQM context address the degree of benchmarking undertaken in the organization on all possible areas influencing competitiveness (Samson & Terziovski, [1999](#)). Quality improvement initiatives are based on fact instead of opinion. Decision quality determines the organization's success. Fact-based decision-making needs to emphasize gathering facts, evidence, data, and figures. Decisions and operations should depend on factual information about projections, trend analysis, and performance indicators that reflect operations, processes, and products (Tummala, [1996](#); Al-Damen, [2017](#)). Regular review and planned cross-checking need to be undertaken to ascertain that information offers backup to the management of the quality plan (Tummala, [1996](#)). Gathering precise, suitable, dependable, and appropriate data and information from both outside and within the organization to assess, improve, and evaluate purposes is essential for the proper use of resources, recognition of customer demands, assessing the efficiency and effectiveness of the operations, and understanding the reason for quality-related issues (Mosadeghrad, [2015](#)).

Servant Leadership

Different writers attempted to define servant leadership in different ways because of the pioneers' lack of a clear definition, such as Greenleaf ([1970](#)) and Spears ([1995](#)). The succeeding writers made an effort to enhance the clarity of what servant leadership is. For instance, Reinke ([2004](#)) defined a servant leader as"...one who is committed to the growth of both the individual, and the organization, and who works to build community within organizations" (p. 33). Furthermore, Eva et al. ([2019](#)) defined servant leadership as *an* "other-oriented approach...manifested through one-on-one prioritizing of follower individual needs and interests, and outward reorienting of their concern for self towards concern for others within the organization, and the larger community" (p. 4). Servant leadership can not only help employees achieve and grow, but it can also benefit their leaders and the company as a whole. Effective organization and successful teams are viewed not as superhuman by organizational members (Yukl, [1999](#)). In this sense, one of the characteristics of effective servant leadership is changing the pyramid (i.e., giving priority to the interest and growth of their subordinates). This is why servant-led organizations and teams are effective and successful. Despite much theoretical and empirical research on servant leadership, there is still no standardized model for universal application, resulting in a lack of clearly defining it (Dierendonck, [2011](#); Kumar, [2018](#)). That is why many researchers are still consumed by defining servant leadership in their way (Reinke, [2004](#)) and using different frameworks to measure servant leadership (Kumar, [2018](#); Reinke, [2004](#); Waal & Sivro, [2012](#)). With this, studies have found servant leadership is a multidimensional construct, with the type and number of dimensions varying among researchers. Due to a lack of clarity in defining servant

leadership in literature, few are analyzed in Table 2.

Table 2

Alternative Servant Leadership Framework

S.No	Servant Leadership Models	Constructs
1	Spears (2002)	Listening, Empathy, Healing, Awareness, Persuasion, Conceptualization, Foresight, Stewardship, Commitment to the growth of people, and Building Community.
2	Dierendonck (2011)	Humility, interpersonal acceptance, empowering and developing people, authenticity, providing suitable directions, and stewardship
3	Liden et al. (2015) & Ehrhart (2004)	Formation of relationships with followers, putting them first, empowering them, helping them grow and succeed, behaving ethically, demonstrating conceptual skills, and creating value for others outside the organization.

Servant Leadership and TQM Practices

Using the different TQM frameworks, a wide range of antecedents of TQM practices were examined in existing studies. For instance, antecedents of TQM include organizational leadership (Chan et al., 2016), information systems (Siam et al., 2012), organizational strategy (Prajogo & Sohal, 2010), and organizational culture (Rad, 2006). As there are a limited number of studies addressing leadership issues related to TQM (Kumar & Sharma, 2018; Kaynak, 2003; Waldman, 1993), this study motivated us to look at servant leadership and how it influences TQM practices. With this in mind, TQM leadership should provide an inspirational vision, make strategic plans shared by all, and instill values that guide followers. TQM leaders should believe in TQM values and principles and then demonstrate their belief and commitment to TQM implementations.TQM leadership should provide an inspirational vision, make strategic plans that are shared by all, and instill values that guide followers (Siam et al., 2012). TQM leadership must be dedicated to leading followers. The TQM leadership ensures that TQM strategies, values, and goals are shared in the organization.TQM leadership.

First, servant leadership plays a significant role when implementing TQM. Employee training and education are important to people management (Phelps et al., 2007). Leaders play a prominent role in designing and providing training and education to improve the effort of second-class workers. A well-trained workforce is required to improve any operations of the organization and will be able to attain efficiency (Kaynak, 2003). Servant leadership positively influences employee adaptability and self-efficacy using training, coaching, and mentoring (Ahearne et al., 2005). Servant leadership is responsible for establishing a work environment where teams can develop to work cooperatively toward achieving the institution's vision (Hawkins, 2009). Second, servant leadership enhance job outcome of employees, create a genuine focus and culture of customer service (Muller et al., 2018) to positively influence customer focus, fosters customer value co-creation by enhancing psychological capital and service-oriented organizational citizenship behavior of employees (Hsiao et al., 2015); encourage customer focus through personal model of serving in cooperative, considerate and helpful manner (Kumar, 2018; Maden et al.*,* 2014), and care for customers and their needs by serving their psychological needs, selling fair products and declaring ingredients of products (Pless, 2017). Third, through the increased focus on the need of followers, servant leaders positively impact organizations' internal process performance (i.e., process management) measured by efficiency and quality of processes (Muller et

al., 2018), thereby facilitating TQM implementation. Fourth, last but not least, by providing needed training to employees, servant leaders increase employees' learning; the cumulative effect increases organizational learning or information and analysis (i.e., the process of collecting, sharing, and interpreting information) (Muller et al.*,* 2018). As a consequence, the following hypothesis was formulated:

H1: Servant leadership has a significant and direct effect on TQM practices (customer focus, people management, process management, strategic planning, information, and analysis).

Inter-functional Coordination as a Pathway

Designed internal communication systems appeared to foster a higher level of inter-functional coordination. Such an open communication system appeared to facilitate the flow of market-related information and contribute to the fundamental dialogue between strategy makers and employees at the customer interface (Harris, 2000). Service and relational-oriented leader behavior are chiefly focused on behaviors that encourage shared interactions, create supportive culture, support equitable treatment of followers, develop and communicate a vision, adapt to change, increase flexibility, and promote (Battilana et al., 2010; Ozsashin et al., 2013). Servant leadership behavior plays a significant role in establishing communication, coordination, and integrity. Communication and interaction facilitate interdepartmental integrations (Suckley et al., 2013). Moreover, it provides a sense of direction and shares a compelling vision, a foundation for creating inter-functional coordination (Hunter et al., 2013). Jaramillo et al. (2009) empirically studied the role of relational leadership in inter-functional coordination and found that employees are more likely to judge their firm as inter-functionally coordinated when leaders engage in participative and supportive leadership behavior.

Inter-functional coordination is the extent to which a firm shares information and resources and develops alignment in its processes with different functional units. Firms require to coordinate functional units through knowledge sharing and effective coordination to achieve cost, quality, delivery, and positioning competitiveness (Rehman & Jajja, 2022). Extant literature has emphasized the role of inter-functional coordination in implementing TQM practices. It is argued that organizations that implement TQM practices in rigorous competition are more inclined toward the integration of functional units including production, procurement, marketing, R&D, etc. The need for inter-functional coordination has increased to formulate and implement organizational practices and strategies with the support of others (Gheysari et al., 2012). Likewise, Reed et al. (2000) also argued that the implementation of TQM practices could be attained by the coordination and integration among functional units. In this sense, the coordination of one department with another department has been acknowledged as a way to effectively implement TQM practices. TQM practices include customer focus, people management, process management, strategic planning, information and analysis, and collaboration among functional units for resource sharing and information sharing regarding sales forecasts, production plans, and order tracking. These TQM practices will be implemented better when functional units integrate their business strategies at the functional level through inter-functional coordination. Richness in coordination among people and departments is achieved through a higher level of inter-functional coordination. Thus, we

believe that inter-functional coordination will not only be associated with TQM practices but also mediate the relationship between servant leadership and TQM practices: Thus, we hypothesize,

H2: Inter-functional coordination has a significant and direct effect on TQM practices(customer focus, people management, process management, strategic planning, information, and analysis).
H3: Inter-functional coordination had a significant mediating effect between servant leadership and TQM practices(customer focus, people management, process management, strategic planning, information, and analysis).

The hypothesized relationship between study variables is displayed in Figure 1. As shown in Figure 1, there are independent variables (i.e., servant leadership), one mediating variable (i.e., inter-functional coordination), and five outcome variables(TQM practices including customer focus, people management, process management, strategic planning, information, and analysis), in which servant leadership directly influence inter-functional coordination and TQM practices, and influence TQM practices indirectly through inter-functional coordination. The indirect influence denotes how TQM practices are influenced by servant leadership, in which servant leadership influences inter-functional coordination, which, in turn, influences customer focus, people management, process management, strategic planning, information, and analysis.

Figure 1

Research Model in Which Inter-functional Coordination Serves as a Pathway between Servant Leadership on the Implementation of TQM Practices
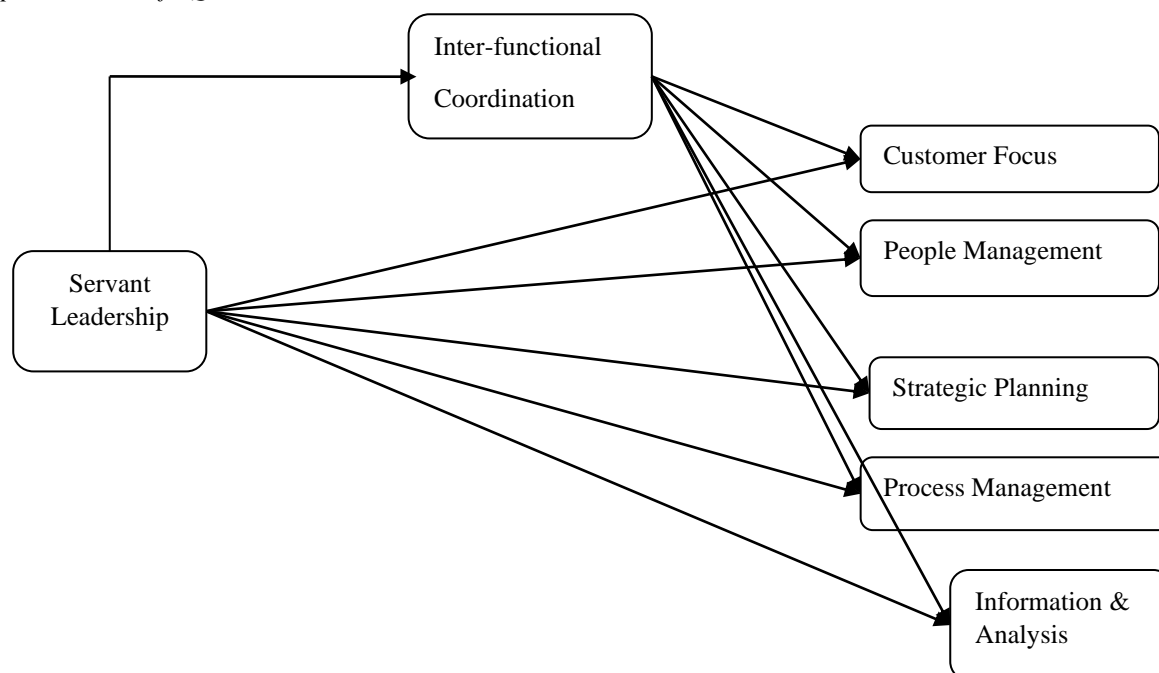
Method

Sample and Data Collection Procedures

The fieldwork for this study was conducted between the beginning of April 2021 to the mid of July 2021. The questionnaire was not translated into the local language as our sample respondents were leaders who were supposed to have sufficient skills for reading and understanding the English language. The researcher delivered the questionnaire and a cover letter from the Department of Business Administration and Information System (BAIS), School of Commerce. This was intended to encourage participants to cooperate with the researcher in the fieldwork data collection phase. Accordingly, out of 121 sample organizations, 104 agreed to take part. A total of 312 questionnaires were distributed within 104 organizations; the sample comprised three respondents per organization, mainly from reform, quality, and marketing offices, especially for middle and supervisor-level leaders. The researcher personally delivered the questionnaire to organizations. It was decided that the researcher would not be present when sample respondents were completing the questionnaires. They were asked to answer them at their convenience, and the researcher followed up via phone. By doing this, the researcher attempts to avoid putting pressure on respondents, which might have led to distorted responses to questions. A total of 215 questionnaires were returned, 12 of which were unusable (incomplete); therefore, a total of 203 questionnaires were usable. The authors used SEM with SPSS AMOS 23 for testing hypotheses. In addition, the mediation tests were analyzed through the bootstrapping method of AMOS 23.

Measures

Servant Leadership. The fourteen-item, one-dimensional servant leadership subscale with 14 items scale of Ehrhart (2004) was used to measure servant leadership behavior. Ehrhart (2004) identified seven elements of servant leadership behaviors, such as having conceptual skills, behaving ethically, helping subordinates grow and succeed, forming relationships with subordinates, empowering subordinates, and putting subordinates first. We used this tool because using this measure in the context of other studies showed good reliability and validity. Responses were indicated in a five-point response format (1 = not at all; 5 = frequently, if not always). The coefficient alpha reported for the current sample was 0.94. Higher scores show higher servant leadership.

   Inter-functional coordination. Inter-functional coordination was measured by six items adapted from (Thongsri & Chang, 2019). The coefficient alpha reported for the current sample was.90. Higher scores show higher inter-functional coordination.

   Customer Focus. Customer focus was measured by six items adapted with sample items including "in designing new products and services our company uses the requirements of domestic customers" (Samson & Terziovski, 1999). The coefficient alpha reported for the current sample was .90. Responses were indicated in a five-point response format (1 = strongly disagree; 5 = strongly agree). Higher scores show greater customer focus.

   People Management. Eight items were adapted, six items were used to measure people management while two items were excluded as they loaded to other variables with sample items, including" Our company has an organization-wide training and development process, including career path planning, for all employees" (Samson & Terziovski, 1999). Responses

were indicated in a five-point response format (1 = strongly disagree; 5 = strongly agree). The coefficient alpha reported for the current sample was .89. Higher scores show greater people management.

Process Management. Five items were adapted, only three items were used to measure process management while two items were disregarded as they loaded on another variable with sample items, including "Our company has well-established methods to measure the quality of products and services" (Samson & Terziovski, 1999). Responses were indicated in a five-point response format (1 = strongly disagree; 5 = strongly agree). The coefficient alpha reported for the current sample was.88. Higher scores show greater process management.

Strategic Planning. There are six items for strategic planning with sample items including "when developing plans, policies and, objectives, incorporate customer requirements, supplier capabilities, and needs of other stakeholders, including the community" (Samson & Terziovski, 1999). Responses were indicated in a five-point response format (1 = strongly disagree; 5 = strongly agree). The coefficient alpha reported for the current sample was.92. Higher scores show greater strategic planning.

Information and analysis. We adopted six items to measure information and analysis (Samson & Terziovski, 1999). Responses were indicated in a five-point response format (1 = strongly disagree; 5 = strongly agree). The coefficient alpha reported for the current sample was.90. Higher scores show greater information and analysis.

Results
Common Method Bias(CMV)
In this study, we used procedural techniques to reduce the potential for common method bias. These techniques include the administration of questionnaires and statistical controls after questionnaires are returned. We administered questionnaires and guaranteed the confidentiality of the respondents to minimize common method bias by enabling respondents not to be influenced by how others are expecting them to respond. Furthermore, we guaranteed our respondents that there were no correct and wrong responses and that they should offer responses as honestly as possible (Podsakoff et al., 2003). To diminish single-source bias, we designed our sample to include respondents with sufficient and relevant knowledge (i.e., senior, middle-level, and lower-level managers).

Considering the statistical controls after questionnaires were returned, this study tested Harman's single factor to examine the extent of total variance explained by a single factor. By performing exploratory factor analysis, we found that a single factor explained 17.36% of the total variance. Thus, CMV does not influence the results of this study. Table 3 presents the validity and reliability of the measurement model.

Table 3

Validity and Reliability of the Measurement Model

Factors	No. of items	Code of Items	Standardized Loading	Average Variance Extracted(AVE)	Composite Reliability(CR)
Servant Leadership	Fourteen	SL1	.73	.5	.94
		SL2	.70		
		SL3	.69		
		SL4	.72		
		SL5	.68		
		SL6	.72		
		SL7	.81		
		SL8	.72		
		SL9	.71		
		SL10	.72		
		SL11	.77		
		SL12	.77		
		SL13	.66		
		SL14	.69		
Inter-functional Coordination	Six	IFC1	.79	.60	.90
		IFC2	.76		
		IFC3	.80		
		IFC4	.78		
		IFC5	.77		
		IFC6	.73		
People Management	Six	PM1	.79	.60	.90
		PM2	.82		
		PM3	.83		
		PM4	.77		
		PM5	.68		
		PM6	.68		
Customer Focus	Six	CF1	.72	.60	.92
		CF2	.80		
		CF3	.84		
		CF4	.79		
		CF5	.72		
		CF6	.80		
Process Management	Three	PM1	.86	.70	.90
		PM2	.86		
		PM3	.81		
Strategic Planning	Six	SP1	.80	.65	.94
		SP2	.78		
		SP3	.86		
		SP4	.80		
		SP5	.82		
		SP6	.75		
Information and Analysis	Six	IA1	.67	.60	.92
		IA2	.76		
		IA3	.82		
		IA4	.83		
		IA5	.71		
		IA6	.79		

Descriptive Statistics and Correlations

Means, standard deviations, and correlations between the variables in this study are presented in Table 4. As can be expected, the analysis in Table 4 shows servant leadership was positively correlated with inter-functional coordination, customer focus, people management, process management, strategic planning, and information and analysis. The analysis in Table 4 shows that inter-functional coordination was also positively associated with customer focus, people management, process management, strategic planning, and information and analysis. Besides, TQM practices are positively and significantly associated with one another. All

TQM practices had a moderate correlation coefficient with servant leadership. Likewise, all TQM practices had a significant correlation coefficient with inter-functional coordination.

Table 4

Pearson Correlation between Servant leadership, Inter-functional Coordination, and TQM practices

S.No	Constructs	M	SD	1	2	3	4	5	6	7
1	SL	3.59	.73							
2	IFC	3.60	.75	.51**						
3	CUF	3.70	.74	.59**	.57**					
4	POM	3.50	.80	.58**	.53**	.71**				
5	PMT	3.59	.83	.51**	.40**	.70**	.58**			
6	SPG	3.93	.73	.57**	.60**	.73**	.70**	.58**		
7	IAA	3.76	.68	.52**	.49**	.64**	.58**	.57**	.69**	

Note.**Significant to 0.01, one-tailed.

## Direct Tests When Mediating Variable is Included in the Model

As shown in Figure 2, servant leadership was significantly related to customer focus (B = .41, p < .001), people management (B = .43, p < .001), process management (B = .44, p < .001), strategic planning (B = .38, p < .001), and information and analysis (B = .39, p < .001). Therefore, H1 was supported. In addition, as shown in Figure 2, the results demonstrated that inter-functional coordination was significantly related to customer focus (B = .45, p < .001), people management (B = .40, p < .001), process management (B = .25, p < .01), strategic planning (B = .50, p < .001), and information and analysis(B = .37, p < .001). Consequently, H2 was supported.

According to Chin (1998), the .67 R2 value has strong and accurate predictive power; the .33 R2 value has moderate predictive power, while the .19 R2 value has weak predictive power. As shown in Figure 2, the R2 value of customer focus was 58%, people management was 58%, process management was 38%, strategic planning was 59%, and information and analysis 59%. All the R2 values except for process management (38%) indicated moderate predictive power.

Figure 2

The Direct Tests When Mediating Variable was Included in the Model
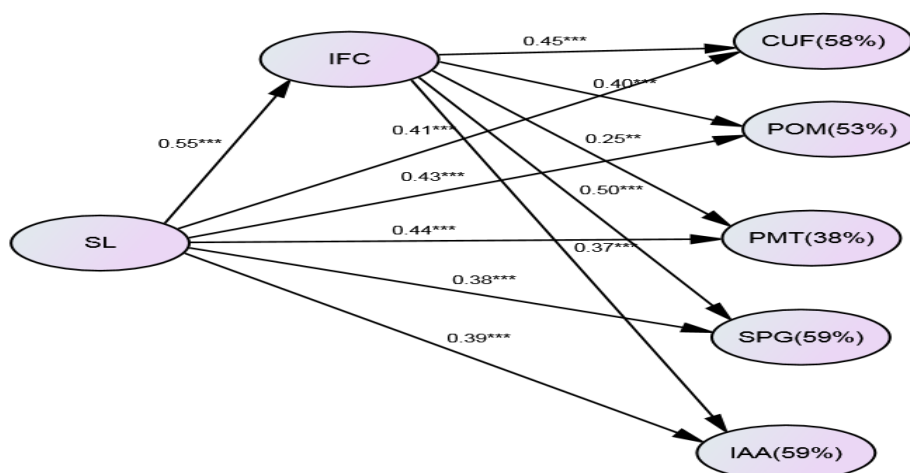
As shown in Table 5, the fit indices resulting from the CFA indicate that the model with mediating variables fits the data sufficiently well, with χ^2= 1593.79; df = 1019; cmin/df =1.56; TLI = .91; CFI = .91; and RMSEA = .05.

Table 5

Goodness of Fit Index for Direct Tests when Mediating Variable was Included in the Model

S.No	Goodness of Fit Indexes	Value
1	Chi-Square(χ^2)	1593.79
2	Degree of Freedom(DF)	1019
3	*P-Value*	.000
4	The ration of chi-square to degree of freedom (CMIN/DF)	1.56
5	Comparative Fit Index (CFI)	.91
6	Tucker Lewis Index (TLI)	.91
7	Root Mean Error of Approximation (RMSEA)	.05

According to Table 6, the indirect effects of servant leadership on customer focus (B = .19, p < .01, 95% CI [.11, .34]), people management (B = .23, p < .01, 95% CI [.09, .42]), process management (B = .15, p < .01, 95% CI [.04, .30]), strategic planning (B = .24, p < .01, 95% CI [.15, .39]), information and analysis (B = .19, p < .01, 95% CI [.10, .36]) were significant. As the direct effects between servant leadership and TQM practices were significant, inter-functional coordination partially mediates the relationship between servant leadership and customer focus (B = .41, p < .01), people management (B = .43, p < .01), process management (B = .44, p < .01), strategic planning (B = .37, p < .01), information and analysis (B = .39, p < .01). Consequently, H3 was supported.

Table 6

Mediation Effects: Bootstrapping

S.No	Paths	Indirect Effect	DirectEffect	Lower	Upper	P
1	SL→IFC→CUF	.19	.41	.11	.34	**
2	SL→IFC→POM	.23	.43	.09	.42	**
3	SL→IFC→PMT	.15	.44	.04	.30	**
4	SL→IFC→SPG	.24	.37	.15	.39	**
5	SL→IFC→IAA	.19	.39	.10	.36	**

Discussion

The topic of servant leadership has been established as an important leadership behavior and continues to receive substantial interest in both the popular press and academic environment. One concern that has not been argued theoretically and until now has remained unexamined is whether inter-functional coordination intervenes between servant leadership and the implementation of TQM practices. Our research sought to address this research gap by examining the role of servant leadership and its impact on the implementation of customer focus, people management, strategic planning, process management, and information and analysis through inter-functional coordination as a mediator.

The result of this study suggests that servant leadership had a significant direct effect on TQM practices. First, this study showed that servant leadership had a significant direct effect on customer focus (B = .41, p <.01); this finding is consistent with previous studies (e.g., Maden et al., 2014). Servant leaders care for customers by serving their psychological needs and selling fair products (Pless, 2017). Second, this study demonstrated that servant leadership had a significant direct effect on people management (B = .43, p < .01), Third, servant leadership is directly related to training and employee relations. This study is consistent with previous studies (Jabnoun & Sedrani, 2005; Kaynak, 2003). Employee training and education are important for people management (Phelps et al., 2007). Leaders play a prominent role in designing and providing training and education to improve the effort of second-class workers. A well-trained workforce is required to improve any operations of

the organization and will be able to attain efficiency (Kaynak, 2003). By providing proper training and education for followers, it is possible to prevent under-working, inefficient actions, and ill-directed efforts. Servant leadership is a big concern for the welfare of followers and emphasizes their development.

Third, this finding showed that servant leadership had a significant direct effect on process management ($B = .44$, $p < .01$); this finding is consistent with previous studies (Jabnoun & Sedrani, 2005; Kaynak, 2003). With an increased focus on the need for followers, servant leaders have a positive impact on organizations' internal process performance (i.e., process management) measured by efficiency and quality of processes (Muller et al., 2018). Moreover, by providing needed training, servant leaders increase employee learning, and the cumulative effect increases organizational learning (i.e., the process of collecting, sharing, and interpreting information) (Muller et al., 2018). Fourth, this study empirically supported the expected positive effect of servant leadership on strategic planning ($B = .37$, $p < .01$). Servant leadership can maximize the significance of decision-making, and strategic planning through appropriate decisions. Servant leaders engage in strategic planning, information and analysis, and systematic process for steady change emphasizing internal effectiveness, and commitment, and always match with implementing TQM practices by considering structure, strategy, and the measurement system. They look at problems beyond day-to-day realities and seek to ensure a healthy balance between day-to-day activities and conceptual thinking (Spears, 2002), create alignment between objectives and strategies by envisioning the future, using intuition to decide the direction for the organization, taking the initiative, moving out ahead, clarifying goals, and understanding what it takes to get to the vision(Dierendonck, 2011). Last but not least, this study confirmed that servant leadership had a significant direct effect on information and analysis ($B = .39$, $p < .01$).

Furthermore, this study was consistent with the work of (Cho & Jong, 2014) for America-based firms but challenges the result for China-based firms. For instance, questioning the universal applicability of TQM, a comparative study was conducted (Cho & Jong, 2014) between two nations in which transformational leadership was positively related to TQM practices for the America-based firms, while in the same study negative relationship was found between transformational leadership and TQM practices for the China-based firms. Furthermore, Chan and Ng (2012) found a negative relationship between transformational leadership and the implementation of TQM practices. Despite the above empirical work focusing on the link between transformational leadership and TQM practices, Bass (2000) argued that transformational and servant leadership has many similarities including vision, influence, trust, credibility, and service. However, servant leaders go beyond transformational leaders in focusing on the needs of followers. So we argue that the positive effect of transformational leadership on TQM practices holds true for servant leadership.

An inter-functionally coordinated organization is likely to understand customer needs, answer any quests of the customers, maintain current customers loyal, and draw new customers. The implementation of customer focus ($B = .45$, $p < .001$), people management ($B = .40$, $p < .001$), process management ($B = .25$, $p < .01$), strategic planning ($B = .50$, $p < .001$), information and analysis ($B = .37$, $p < .001$) were directly and positively influenced by culture of inter-functional coordination and cross-functional communication at different organizational level throughout the organization which is consistent with current theoretical

studies (Reed et al., 2000). This implies that departmental interaction needs to be in place for TQM practices to operate successfully (Pereira-Moliner et al., 2016). On the other hand, according to Mann and Kehoe (1995), "Organizations which are function-oriented and encourage specialization may have difficulty in successfully implementing TQM practices. Inter-functional coordination provides a unifying focus of organizational units and individual efforts in offering value to the customers (Narver & Slater, 1990). It can successfully reduce unnecessary work and generate a more united internal atmosphere through improved synergy and aligned goals among internal departments that facilitate the exploitation of market information and extend the positive influences of leaders (Wang et al., 2021).

Lastly, the results from this study suggest that firms with servant leadership employing inter-functional coordination will have higher implementations of customer focus, people management, strategic planning, process management, and information and analysis. Kassim and Sulaiman (2011) argued that supportive leadership with more receptive, consultative to employees, and participative build an appropriate environment where a culture of inter-functional coordination is successfully developed and sustained. Servant leadership enhances a thorough, deliberate, and careful information search and processing through interactive dialog and harmonious relationships (Rai & Prakash, 2016). Hence, the findings of this study indicated that servant leadership- inter-functional relationships seem to be beneficial to enhance the implementation of each TQM practice. We examined the indirect effects of servant leadership on TQM practices to better understand the role of inter-functional coordination as a mediator. Servant leadership seeks to focus on employees' needs and preferences and provide them with the appropriate resource.

Theoretical Implications

Our findings extend existing studies in different ways. Firstly, we found inter-functional coordination to be a vital intervening variable in the servant leadership–TQM practices relationship. These findings add to the literature by clarifying why (through inter-functional coordination) servant leadership is positively related to customer focus, people management, process management, strategic planning, information, and analysis. The mediating role of inter-functional coordination between servant leadership and TQM practices is a new finding. Moreover, the evidence for the direct relationship between inter-functional coordination and TQM practices including customer focus, people management, strategic planning, process management, information, and analysis, is an important finding. The result of this study accomplished in one of a developing country, Ethiopia shows significant similarity with research conducted in the context of Western countries. This study brought new insight into leadership in Ethiopia and cultural capability, particularly the culture of inter-functional coordination was similar to Western culture in the implementation of customer focus, people management, process management, strategic planning, information and analysis (Bouranta, 2020; Cho & Jung, 2014; Sfakianaki, 2019). In this context, the implementation of TQM practices will be further enhanced through servant leadership and inter-functional coordination. Lastly, this study signifies the initial effort to investigate the concept of servant leadership, inter-functional coordination, and the implementation of TQM practices within the manufacturing and service sector of a developing country. Although these concepts have been

widely applied independently, this is the first attempt to investigate their association in developing countries (Cho & Jung, 2014; Ozsahin et al., 2013).

Practical Implications

This study contributes several practical implications. First, it reports the positive effect of servant leadership on the implementation of customer focus, people management, process management, strategic planning, information, and analysis, and these findings give justified a movement to the practice of servant leadership behavior in the emerging marketplace. This study finding has great implications for matching servant leader's behavior with the implementation of TQM practices. It is significant to identify the fundamental patterns in leadership behavior for practicing TQM practice leaders. The findings of this study also serve to encourage senior managers from manufacturing and service sectors to not only focus on building and maintaining transformational and transactional leadership behaviors but also to concern themselves with servant leadership behaviors. This research offers strong evidence that servant leadership focusing on forming relationships with followers, putting them first, empowering them, helping them grow and succeed, behaving ethically, demonstrating conceptual skills, and creating value for others outside the organization increases the implementation of TQM practices.

Moreover, this study finding shows that inter-functional coordination as a mechanism between servant leadership and TQM practices proved to enhance the implementation of customer focus, people management, strategic planning, process management, information, and analysis. Servant leadership significantly affects inter-functional coordination. Inter-functional coordination mediates the relationship between servant leadership and the five TQM practices, showing that servant leadership offers a rich resource that organizations can transform to achieve inter-functional coordination. Inter-functional coordination can be a catalyst to share market information and resources amongst functional units, in turn enhancing the implementation of TQM practices. Firms not only focus on close coordination between R&D, marketing, and quality departments, but also servant leadership behaviors. We suggest that managers should pay attention to inter-functional coordination, and a firm should focus more on involving more than one department for sharing strategic information and all organizational resources for promoting and cultivating customer and employee orientation. Overall, the implementation of TQM practices in a developing country's manufacturing and service firms where issues of quality, cost, and competitiveness, among other challenges, are extensively contributing valuable insights to the literature on leadership, cultural capability(i.e., inter-functional coordination, and the implementation of TQM practices.

Future Research Directions

Despite the valuable contributions of this research, there are some limitations, which in turn necessitate additional study in the future. First, in this study, only servant leadership was examined. In future investigations, it might be possible to use different leadership behaviors, such as responsible, authentic, spiritual, and charismatic leadership. Second, our data were collected using single-source self-reported questionnaires. As such, we note that common method bias may be present. Hence, future research should consider collecting data from multiple respondents for dependent and independent variables. Third, the survey used in this

study was quantitative. One main benefit of quantitative analysis is that hypotheses can be directly tested based on the data collected. However, a future study incorporating qualitative analysis could further explore servant leadership behavior, inter-functional coordination, and the implementation of TQM in Ethiopia or beyond in greater depth than can be achieved through a survey questionnaire. In-depth interviews utilizing open-ended questions could also allow for a deeper exploration of these constructs.

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