How Do Goal Orientations Affect Organizational Agility? The Mediating Effects of Ambidextrous Operational Capabilities

Mengru Zhang, Jingmei Zhou, Meng Chen, and Hefu Liu

***Abstract*—Organizational agility is critical to the firms' survival and prospects in today's complex environment. Although the firms' goal orientations regulate their efforts in response to market changes and influence organizational agility, existing studies remain inconclusive on the effects of goal orientations on organizational agility and leave the underlying mechanisms of such effects unclear. In this article, we draw upon the orientation–action—outcome framework to look inside the black box of how two types of goal orientations (i.e., learning and performance goal orientation) affect organizational agility by examining the mediating effects of ambidextrous operational capabilities. We also investigate the moderating effects of competitive intensity on the mediating effects of ambidextrous operational capabilities. Using archival data and two-wave multirespondent survey data from 387 top managers of 129 firms, the results reveal important findings. First, the total impact of learning goal orientation on organizational agility is insignificant, but that of performance goal orientation is significant. Second, mass customization and innovative ambidexterity significantly mediate the indirect impacts of learning goal orientation and performance goal orientation on organizational agility. Third, competitive intensity does not influence the indirect effects of learning goal orientation, whereas it weakens the indirect effects of performance goal orientation. We also conducted the fsQCA, the results of which reinforced and refined the findings of mediation and moderated-mediation analysis. These results provide new insights into the underlying mechanisms through which goal orientations contribute to agility and the boundary condition of these mechanisms as well as various configurations associated with high/low agility.**

***Index Terms*—Competitive intensity, goal orientations, innovative ambidexterity (IA), mass customization (MC), organizational agility (OA).**

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I. Introduction

ORGANIZATIONAL agility (OA), which is defined as the firms' capabilities to detect and respond quickly to rapid market changes [1], has become a business imperative to sustain competitive advantage [2]. Achieving such agility is difficult and often requires deploying resources effectively to take operational actions in response to market changes [3]. The existing studies have mainly explored information technology [4], [5], [6], [7], [8], knowledge management [9], and supply chain-related factors [10] as antecedents of OA. Studies have noticed that goal orientations, reflecting the firms' dispositions toward developing or demonstrating competence [11], may be a potential antecedent of OA [12]. Such orientations steer the firms' interpretations of market changes and regulate how firms deploy resources to address changing markets [13], thereby influencing OA. However, few studies have examined the relationship between goal orientations and OA.

Indications concerning the effects of goal orientations on agility are inconsistent [12], [14]. Scholars suggest that the intrinsic motivations to develop or demonstrate competency within goal orientations enable firms to invest attention and resources in market scanning and operational adaption, thus enabling firms to respond rapidly to market changes and improve agility [12]. For example, Che-Ha et al. [15] indicated that goal orientations enable firms to engender positive attitudes toward market requirements and changes, which may help them toward responding rapidly. However, scholars have expressed concerns that the expected agility benefits of goal orientations are not always evident because strong goal orientations may result in inappropriate resource deployment that does not improve agility [14]. For example, Chadwick and Raver [11] indicated that strong goal orientations may make firms overemphasize the experimentation of new knowledge or refinement of the existing knowledge, which results in knowledge overload or missing new market opportunities and impedes agility. Anecdotal evidence also indicates that even with strong goal orientations to develop new competence, Nokia invested inappropriately in its outdated Symbian operating systems and failed to respond to threats posed by Google and Apple in the smartphone business [16]. Such inconsistencies in the agility effects of goal orientations may result from the failure to reveal the underlying mechanisms through which goal orientations are transformed into improved OA [13].

The existing literature indicates that goal orientations may not automatically enhance agility [14], [17]. Goal orientations merely elicit dispositions toward, rather than actual involvement in, developing new competency or demonstrating competency to others [12]. Although they entail organizational beliefs that regulate resource deployment, appropriate actions must be implemented to realize their values [14]. Accordingly, firms must discover the underlying actions that transfer the benefits of goal orientations to agility to capture the potential of goal orientations. However, little literature has explored how goal orientations contribute toward agility.

To address this gap, this study proposes that the effect of goal orientations on agility can be realized through ambidextrous operational capabilities (AOCs). AOCs refer to firms' capabilities to simultaneously pursue two contradictory value-creating operational activities [18]. AOCs are typically categorized into mass customization (MC) and innovative ambidexterity (IA), both of which are important enablers of agility [18]. MC enables firms to address market changes in a cost-efficient manner by producing customized products at mass production [19]. IA helps firms to respond effectively to market changes by simultaneously pursuing both incremental and radical innovations [20]. Failing to develop AOCs may trap firms in specific competence patterns and prevents them from quickly responding to market changes [4]. Meanwhile, AOCs require goal orientations to guide resource deployment by tackling the tensions between conflicting operational activities [21]. Hence, goal orientations regulating the firms' resource deployment may trigger AOCs, ultimately improving agility. However, the existing literature ignores the underlying mechanisms that transfer the benefits of goal orientations to agility. This raises the first research question: How do MC and IA mediate the effects of goal orientations [i.e., learning goal orientation (LGO) and performance goal orientation (PGO)] on agility?

Furthermore, the orientation–action–outcome framework proposes that although goal orientations affect firms' actions and, ultimately, agility, their effects on firms' actions are contingent upon environmental conditions [22], [23]. The firms' external business environment can influence internal processes by obstructing or creating strategic matches [24]. Specifically, diverse external business environments result in uncertainty in firms' actions, which influences how firms with goal orientations emphasize resource deployment to production and innovation activities [23]. Most industries in China have undergone industrial transformation and upgrading, thereby escalating competitive pressures [24]. Thus, competitive intensity has been regarded as one of the most critical environmental factors reflecting the markets that firms are operating in [25]. High competitive intensity is characterized by fierce rivalry among industry peers with frequent product updates, added services, intense advertising campaigns, and price wars [26]. Such conditions may increase the uncertainty of firms' competitive actions and may reshape how goal orientations guide the firms' resource deployment in developing AOCs [23]. Accordingly, competitive intensity will alter the effectiveness of goal orientations and ultimately alter the indirect effects of goal orientations through AOCs on agility. Previous studies on innovation and technology management have examined the moderating role of competitive intensity in the relationship between firm characteristics, such as IT capabilities and firm actions in production and innovation [24], [27]. However, the contingent effect of competitive intensity on the indirect effects of goal orientations through AOCs on agility remains underexplored. This leads to the second research question: How does competitive intensity moderate the indirect effects of goal orientations on OA through AOCs?

To answer the questions posed above, this study submits a moderated-mediation model that proposes the mediating roles of AOCs in channeling the indirect impacts of goal orientations on agility and the moderating impact of competitive intensity on such indirect effects. Specifically, we followed prior literature to divide goal orientations into LGO and PGO [15]. While LGO reflects a firm's disposition to develop competence by ongoing learning, PGO captures a firm's disposition to demonstrate competence to stakeholders, such as customers and competitors [28]. These two orientations reflect distinct dispositions and steer firms to develop distinct resource deployment patterns in agility building [29]. Thus, it is imperative to differentiate the effects of LGO and PGO on OA. Our moderated-mediation model is proposed based on the orientation–action–outcome framework [17]. This framework proposes that, while orientations guide how firms deploy resources to achieve business outcomes, appropriate business actions must be taken to achieve the desired outcome [17]. It also suggests that the influence of orientation on business actions and outcomes often depends on external contexts [23]. Thus, this framework offers a comprehensive lens through which to explore our research model. This study collected archival and two-wave multirespondent survey data from 387 top managers from 129 firms to test our research model. The findings indicate that LGO has a direct negative impact, but PGO has a direct positive impact on agility. AOCs (i.e., MC and IA) mediate the indirect effects of LGO and PGO on agility. Besides, competitive intensity does not influence the indirect effects of LGO, whereas it weakens the indirect effects of PGO.

This study expounds on the current studies in several ways. First, this study empirically confirms the differential effects of LGO and PGO on agility [12], [13]. Second, we open the black box of how goal orientations influence agility [30], [31] by revealing the mediating effects of AOCs. Third, this study enriches our knowledge of the boundary condition altering the effects of goal orientations in enabling agility [23]. Overall, we offer novel insights into the mechanisms of transforming the benefits of goal orientations into agility and the boundary condition of these mechanisms.

II. Theoretical Background

A. Goal Orientations

Goal orientations reflect firms' inherent dispositions to pursue the development or demonstration of competence [11]. They shape firms' interpretation and interaction with external environments and guide their resource deployment patterns in responding to environmental changes [12]. Goal orientations are typically categorized as LGO and PGO [15]. LGO reflects a firm's disposition to develop competence, whereas PGO captures a

firm's disposition to demonstrate competence to stakeholders, such as customers and competitors [28]. Because LGO and PGO emphasize different dispositions, they result in different resource deployment patterns to achieve competitive advantages [29].

Specifically, LGO encourages firms to obtain new skills, master complex situations, and learn from new experiences to pursue success [32]. Firms with LGO believe that their competencies are improvable and tend to search continually for new knowledge to solve organizational problems [33]. They are willing to take risks and challenges and view failures as opportunities to obtain new knowledge [15]. They often engage in trial-and-error experimentation to find operational solutions that fit in with external environments [13].

In contrast, PGO inspires firms to demonstrate competency to attain favorable judgments from stakeholders, such as customers and competitors [13]. Firms with PGO take performance-centric approaches to strategy formulation and prefer attainable solutions that prove their competency [15]. However, they intend to avoid highly uncertain solutions because the high failure rates prevent them from demonstrating competence [29]. Confronting high uncertainties, performance goal-oriented firms often reduce their efforts to engage in aggressive competitive actions [29]. Given the distinctive natures of LGO and PGO, it is necessary to distinguish between their influences on organizational outcomes.

B. Organizational Agility

We define OA as firms' capabilities to quickly detect and respond to market changes [1], [34]. Such agility empowers firms with high alertness to market changes and internal operational flexibility to quickly cater to changing market demands [35]. OA is critical to firm survival and success in today's competitive business world [1]. Accordingly, recent scholarship has paid increasing attention to the antecedents of OA. For example, existing studies have identified IT capability [4], [5], [6], [7], knowledge management capability [9], supply chain management [36], and top management team characteristics [35] as critical antecedents of agility.

Recent scholars have noticed the potential impact of goal orientations on OA [12], [13]. Goal orientations steer firms' interpretations and interactions with the market and influence how firms deploy resources to meet market changes [12]. These orientations guide firms to deploy resources to sense market changes and adjust their operations in response to the changing markets [13]. However, the extant literature provides inconsistent views on the effects of goal orientations on OA [12], [14].

On the one hand, scholars indicate that goal orientations motivate firms to devote efforts to scanning the environment and reconfiguring resource bases to respond quickly [12]. For example, Domurath et al. [13] illustrated that LGO enables firms to quickly adapt to changing markets by guiding firms to deploy resources to learn market conditions and adjust operations accordingly. Pryor et al. [12] suggested that PGO guides firms devote resources to market scanning and enables firms to respond to unfavorable market shifts. On the other hand, some scholars indicate that goal orientations might not be effective for building agility because they may result in inappropriate resource deployment that does not improve agility [14]. For example, Mehta et al. [14] indicated that LGO leads firms to devote excessive efforts and resources to learning new skills, which might distract organizational resources from responding to market changes.

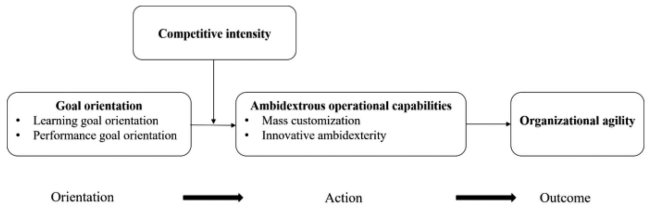

Fig. 1. Conceptual model.

These inconsistent views suggest that goal orientations are necessary but insufficient to improve agility. Goal orientations elicit dispositions toward, rather than actual involvement in, learning new competencies or demonstrating competency [12]. These orientations reflect shared organizational beliefs that consolidate firm resources, thus empowering firms to deploy resources advantageously [37]. Appropriate actions must be implemented to achieve the values of goal orientations [15]. Without corresponding operational actions, strong goal orientations rarely translate automatically into improved agility [30]. Thus, firms must understand the actions that convert goal orientations into improved agility.

However, through a comprehensive literature review on goal orientations and OA, three research gaps exist. First, few studies have empirically examined the effect of goal orientations on agility [4], [5], [6], [7]. Second, a lack of studies exploring the underlying mechanisms through which goal orientations influence agility exists [14], [17]. Third, although previous studies have focused on the boundary conditions that alter the impact of goal orientations, there is a lack of literature examining the moderating effect of competitive intensity [23]. Given these research gaps, our study aims to address them by adopting mediation and moderated-mediation analysis to examine the mediating effect of AOCs in the relationship between goal orientations and agility, as well as the role of competitive intensity on such mediating effects. This research endeavors to provide a nuanced understanding of how goal orientations influence agility.

C. Ambidextrous Operational Capabilities

AOCs reflect firms' abilities to simultaneously pursue two contradictory value-creating operational activities [18]. The basic idea behind AOCs is that firms' operational tasks always have conflicting goals to some degree, and thus, tradeoffs need to be managed [38]. Two critical categories of AOCs are MC and IA [18]. MC reflects firms' capabilities to produce customized products at mass production efficiency [19]. MC manages the tradeoff between mass production emphasizing manufacturing efficiency and pure customization highlighting satisfying demand variety [19]. It allows firms to provide tailored products in efficient ways and enables effective responses to rapidly

changing markets [39]. Successful development of MC requires firms to understand market needs accurately and implement manufacturing systems effectively [40].

IA reflects firms' capabilities to simultaneously pursue incremental innovation and radical innovation [41]. Incremental innovation reflects the improvements of existing offerings, whereas radical innovation refers to the fundamental changes to existing offerings [42]. IA manages the tradeoff between incremental innovation emphasizing minor improvements and radical innovation highlighting fundamental changes [42]. It allows firms to efficiently meet current demands and adapt to potential market changes [41]. The development of IA requires firms to search continuously for external knowledge to renew their internal knowledge base [41].

Researchers have noticed the importance of AOCs in enhancing agility [20], [40]. For example, Lai et al. [40] suggested that MC enables firms to meet market changes in a cost-efficient manner. Rialti et al. [20] suggested that IA promotes agility by enabling firms to respond effectively to market changes. Despite their importance, many firms have found it difficult to implement MC and IA [19], [38]. Firms often lack the incentives and abilities to reconcile difficulties in simultaneously pursuing contradictory operational activities [32], [43]. However, goal orientations can overcome this challenge by arousing firms' intrinsic motivation to search for solutions that tackle the tensions between conflicting operational activities [21]. Hence, this research proposes MC and IA as the essential mediators that translate the values of goal orientations into agility.

D. Orientation–Action–Outcome Framework

The orientation–action–outcome framework proposes that while organizational orientations guide how firms deploy resources to achieve business outcomes, appropriate actions must be implemented to achieve the outcome [17]. Organizational orientation guides firms' strategic focus and enables firms to acquire valuable resources [31]. This provides firms with the potential to improve business outcomes. However, organizational orientation merely reflects shared underlying beliefs within firms rather than actual implementation behavior [30]. Realizing the potential value of orientation requires firms to take implementation actions [30]. This framework offers an appropriate theoretical lens for investigating the outcomes of organizational orientation [17], [31].

The orientation–action–outcome framework has been widely employed in existing studies [23], [31]. For example, Dobni and Luffman [23] suggested that market orientation could promote business performance through strategy implementation actions. Guo et al. [31] proposed that exploratory orientation contributes to business model innovation through entrepreneurial bricolage and opportunity recognition. Kollmann and Stöckmann [17] suggested that entrepreneurial orientation promotes firm performance through exploration and exploitation activities. In this study, we build on the orientation–action–outcome framework and propose that goal orientations promote OA through AOCs (i.e., MC and IA). Fig. 1 summarizes our theoretical model.

III. Hypotheses Development

A. Mediating Role of AOCs

According to the orientation–action–outcome framework, this study argues that AOCs mediate the relationships between goal orientations and OA. We first propose the mediating effect of MC. Specifically, LGO improves MC for two reasons. First, LGO arouses firms' intrinsic learning motivations and facilitates firms' ability to constantly learn about market demands [12]. Firms can easily discover the commonalities and differences among customers' needs, facilitating product modularity design and common parts production [19], [44]. Accordingly, firms can quickly produce customized products in large batches according to individualized requirements, thus achieving MC [19]. Second, LGO encourages trial-and-error experimentation and motivates firms to experiment with advanced manufacturing techniques, such as process modularity [45]. Process modularity enables firms to quickly integrate new production cells into the existing ones without extensive modifications [19]. Thus, learning-oriented firms can successfully implement MC.

Similarly, PGO enhances MC for two reasons. First, by triggering their intrinsic motivation to demonstrate competency to others, performance goal-oriented firms will develop market alertness to changing customer needs to outperform their competitors [15]. This alertness enables the recognition of individualized and shared customers' needs and inspires product modularity design that contributes to MC [46]. Second, performance goal-oriented firms benchmark best practices in the market to show their superiority over competitors [15]. Thus, they will have a great propensity for adopting advanced production techniques, such as process modularity [15]. Accordingly, firms could easily integrate production processes to provide customized products in high volume and, thus, achieve MC [19].

In turn, MC enables firms to provide customized products in a large batch to respond to personalized market requirements [18], [19]. This allows firms to flexibly adjust production processes to respond to various market changes, thereby improving agility. Besides, MC improves firms' delivery efficiency and increases the response speed to market changes [19]. For example, as a global leader in MC, BMW is able to produce and hand over customized cars with a low-cost position in 12 days and, thus, quickly respond to market changes [18]. Thus, we propose that MC is positively associated with OA.

In sum, LGO and PGO help firms to successfully implement MC, which ultimately helps firms to deal with market changes and achieve agility. Consequently, we hypothesize that

(H1): MC mediates the effect of LGO on OA.

(H2): MC mediates the effect of PGO on OA.

Similarly, IA mediates the relationship between goal orientations and OA. Specifically, we first propose that LGO enhances IA. LGO motivates firms to devote efforts to learning market and technological knowledge from both current and emerging fields [32]. With sufficient knowledge support, firms could obtain ideas to improve existing offerings and create disruptive innovations that depart from existing offerings [41]. Firms with LGO are also likely to invest effort in learning the skills and knowledge required for handling the tensions within IA because

they are motivated to master new and complex situations [33]. Accordingly, we anticipate a positive effect of LGO on IA.

PGO also improves IA. Specifically, when coupled with the desire to demonstrate competency, firms with PGO aim to demonstrate competency not only in the extant market but also in the potential market segments [12]. They will develop a great awareness of market knowledge and technological development trends in the industry [15]. In this case, firms with PGO can simultaneously identify the demands of existing customers to improve incremental innovations and predict new demands from emerging customers to generate radical innovations [41]. Besides, performance goal-oriented firms intend to address challenges of tackling tensions within IA because they view such challenges as opportunities to demonstrate competency to competitors [29]. Accordingly, we expect a positive effect of PGO on IA.

In turn, IA helps firms flexibly respond to market changes by improving existing or developing new offerings [4]. The simultaneous provision of incremental and radical innovations addresses customer demands in the existing and new market segments, improving organizational response to market changes [41]. Meanwhile, IA enables firms to increase response speed by constantly experimenting with incremental or radical ideas to provide timely new offerings to meet market needs [4]. For example, BMW could respond quickly to market changes by developing new product lines (e.g., the electric car initiative "Project i") and simultaneously adapting existing products (e.g., one base car model is modified into seven related MINI models) [18]. Thus, IA helps firms achieve agility.

In brief, LGO and PGO enhance the implementation of IA, which ultimately improves OA. Consequently, we hypothesize that

(H3): IA mediates the effect of LGO on OA.

(H4): IA mediates the effect of PGO on OA.

B. Moderating Role of Competitive Intensity

The orientation–action–outcome framework proposes that although organizational orientation affects how firms decide to take specific actions and ultimately influences business outcomes, the impact of orientation on firm actions depends on the environmental context [23]. Accordingly, we propose that competitive intensity moderates the effects of goal orientations on agility through shaping MC and IA [23]. Competitive intensity captures the extent of competition firms face in their industry [26]. In highly competitive industries, many firms compete for a finite number of customers, whereas in less competitive industries, fewer firms compete over resources [47]. High competitive intensity is characterized by fierce rivalry among industry peers with frequent product updates, added services, intense advertising campaigns, and price wars [48]. Competitive intensity enlarges the uncertainty of firms' competitive actions and reshapes how goal orientations guide firms' resource deployment in building operational capabilities [23].

We suggest that competitive intensity amplifies the impact of LGO on MC and IA. Intense competitive markets are often characterized by a high variety of substitutions from competitors to meet customer needs [26]. Such an environment increases the difficulties of implementing MC [40]. Specifically, implementing MC requires more new market information to deeply understand diverse customers' needs because the existing knowledge quickly becomes invalid [40]. In addition, when customers have close substitutes in a competitive environment, they may be unwilling to pay a high premium for customized products, which makes firms handle complex production processes to cater to various customer needs at low costs [40]. Such difficulties induced by intensified competition may also increase the uncertainties of MC [24]. In this case, firms with high LGO are willing to overcome difficulties and embrace uncertainties to learn new knowledge [15]. LGO motivates firms to deeply observe diverse customers' needs and experiment with process modularity to implement MC [15]. As a result, LGO is more important for MC in such competitive conditions [33]. Accordingly, intensified competition will strengthen the effects of LGO on MC.

Similarly, highly competitive environments increase the difficulty of achieving IA because firms' market and technological knowledge become obsolete in such a competitive environment where market conditions change rapidly. Besides, when confronted with the highly intensive competition with many product alternatives, firms find it difficult to differentiate themselves from competitors and develop innovative products [24]. The firms' product innovation advantages may be quickly eroded by competitors' imitation or innovation in competitive environments [49], which increases the uncertainty of innovation activities. For firms to maintain their competitive advantage, they must search for market and technological knowledge to constantly develop radical and incremental innovations [24]. In such conditions, LGO becomes even more valuable for IA because LGO encourages firms to experiment with new ideas and approaches regardless of uncertainty [29]. Accordingly, LGO enables firms to constantly learn the market and technological knowledge in both the current and potential market to handle the tensions within ambidexterity [32]. Thus, intensified competition will strengthen the effects of LGO on IA.

Overall, in highly competitive environments, firms with LGO will be more likely to enhance MC and IA to achieve OA. Considering the mediation effects of MC and IA, we propose that competitive intensity positively moderates such mediation effects in the link between LGO and agility.

(H5): Competitive intensity strengthens the indirect effect of LGO on OA via MC.

(H6): Competitive intensity strengthens the indirect effect of LGO on OA via IA.

In contrast, we propose that competitive intensity weakens the impact of PGO on MC and IA. As discussed above, highly competitive markets increase the difficulty and uncertainty of MC [49], [50]. In such intensified markets, performance goal-oriented firms are concerned that they may not get deserved outcomes from new activities and may not demonstrate competency to customers and competitors [15]. Thus, they are more prone to pursue attainable goals and activities in which they are already experts [13]. Accordingly, in such conditions, firms with PGO are less willing to meet new market needs and redesign the manufacturing processes, inhibiting the implementation of

MC [15]. Thus, PGO will be less important for MC in highly competitive environments.

Similarly, intensified competition increases uncertainty related to innovation activities and requires firms to innovate to compete in competitive markets [49]. However, because firms with high PGO aim to demonstrate competency, they intend to pursue attainable goals and are unwilling to take innovative actions with great uncertainty in highly competitive environments [29]. In such conditions, firms with PGO prefer incremental innovation that could generate relatively certain market returns to radical innovation that is accompanied by high uncertainty [41]. Hence, intensified competition disrupts performance goal-oriented firms' balance between incremental and radical innovation, weakening the effect of PGO on IA.

Overall, in highly competitive environments, firms with PGO will be less likely to develop MC and IA to enhance agility. Considering the mediation effect of MC and IA, we propose that competitive intensity negatively moderates such mediation effects in the link between PGO and agility.

(H7): Competitive intensity weakens the indirect effect of PGO on OA via MC.

(H8): Competitive intensity weakens the indirect effect of PGO on OA via IA.

IV. Methods

A. Sample and Procedures

In this research, we employed an online survey method to collect data from companies operating in China's Yangtze River Delta area. This area is one of the most developed regions in China [35]. Firms in this area experience highly competitive business environments, making OA imperative for organizational survival and prosperity [2]. Firms also desire to improve and demonstrate their competencies to increase competitiveness [51]. Hence, this area provides an appropriate context to conduct our research.

We cooperated with an administrative institution charged with developing the local economy to ease data collection. The institution provided a list of 1200 firms with archival data of demographic information and contacts. The sample pool covered firms with a diverse range of firm ages and firm sizes. This sample pool also covered a broad range of industries, such as petroleum and chemical, electronics, and consumer products. Thus, our sample pool's diversity ensured the external validity of our study. Then, the institution invited top managers of those firms to engage in our online survey by issuing a formal notification. We guaranteed the top managers of the research purposes and the confidentiality of their answers.

We collected the survey data using a time-lagged approach in two waves. This approach remedied common-method bias (CMB) and reverse causation concerns in our study [35], [52]. Specifically, in Wave 1 (Autumn 2016), CEOs and operations' managers were invited to ask questions related to goal orientations and AOCs, respectively. They were asked to disclose their positions before they answered our online survey. The survey directed CEOs to answer the questions examining LGO and PGO because they take charge of firms' whole decisions and know firms' goal orientations. Operations' managers completed the questionnaire examining MC and IA because they are familiar with these operational issues. To improve the response rate, follow-up phone calls were made after sending the invitations. After merging the responses from CEOs and operations' managers, Wave 1 finally generated a sample of 204 firms, representing a response rate of 17.00%.

In Wave 2 (Spring 2018), we used the same procedure as in Wave 1 to collect information on OA from administrative managers of each firm. Administrative managers are in charge of daily operations and know how well their firms respond to market changes. We merged survey data (Waves 1 and 2) and archival data on the firm's demographic information. After removing samples with missing data, 129 firms were used for the final data analysis, which represents a final response rate of 10.75%. The response rate is similar to previous empirical studies on firm-level research [12], [53]. Finally, we obtained archival data on industry competitive intensity from a widely used database, i.e., the China Stock Market and Accounting Research (CSMAR) [54].

Considering nonresponse bias, this study adopted a t-test to compare the difference in terms of key firm characteristics between participating and nonparticipating firms. The results displayed no significant difference between these two groups regarding firm size ($t = -0.139$ and $p = 0.889$) and firm age ($t = -0.307$ and $p = 0.759$), revealing that nonresponse bias is not a concern in this study. The sample demographic information is presented in Appendix A.

B. Measures

We develop the questionnaire based on existing valid English instruments. First, this study developed the questionnaire with a back-translation method to guarantee conceptual equivalence between the Chinese and English versions [25]. Second, we pretested the questionnaire by sending the final Chinese version to 30 MBA students with abundant working experience in senior positions in their companies to assess the clarity of the wording. We then revised the questionnaire according to their feedback. The two procedures guarantee the validity of items in reflecting real-world business contexts. All items were measured using a five-point Likert scale ranging from 1 (very low/strongly disagree) to 7 (very high/strongly agree). Appendix B presents the items of OA, LGO, PGO, MC, and IA.

Competitive intensity was measured by one minus the four-firm concentration index [55]. We obtained the four-firm concentration ratio from CSMAR. We computed the four-firm concentration ratio by dividing the four largest firms' combined sales within each industry (ranked by sales) by the combined sales of that industry. We then measured competitive intensity by one minus the four-firm concentration ratio [55], producing a measure ranging from zero to one. Values closer to one indicate less concentrated and, thus, more competitive industries [55]. To ensure robustness, we also adopted one minus the eight-firm concentration ratio as an alternative measure of competitive intensity [56] and found consistent results.

TABLE I
DESCRIPTIVE STATISTICS

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. OA	**0.841**	0.120	0.286	0.374	0.296	0.318	0.054	−0.010	−0.039	0.030	−0.266*	0.079	0.134
2. LGO	0.130	**0.826**	0.511	0.384	0.382	0.364	−0.056	−0.118	−0.042	0.073	−0.187*	0.190	−0.153
3. PGO	0.294	0.517	**0.815**	0.374	0.413	0.356	−0.068	0.015	−0.102	−0.005	−0.093	0.025	0.136
4. MC	0.382	0.391	0.381	**0.846**	0.547	0.435	−0.197*	−0.032	−0.054	−0.049	−0.103	0.011	0.151
5. Incremental innovation	0.304	0.389	0.420	0.553	**0.904**	0.498	0.007	0.014	−0.203*	0.069	−0.006	0.039	−0.024
6. Radical innovation	0.326	0.372	0.364	0.442	0.504	**0.919**	0.029	−0.114	−0.124	0.106	−0.126	0.047	−0.015
7. Competitive intensity	0.065	−0.044	−0.056	−0.183*	0.019	0.041	**n.a.**	0.238	−0.026	0.183	−0.145	0.145	−0.149
8. Firm age	0.002	−0.105	0.027	−0.020	0.026	−0.101	0.247	**n.a.**	0.191	−0.126	0.010	−0.109	−0.243
9. Firm size	−0.027	−0.030	−0.089	−0.041	−0.189*	−0.111	−0.014	0.200	**n.a.**	−0.116	0.103	−0.162	−0.201
10. IT department size	0.041	0.084	0.007	−0.036	0.080	0.117	0.192	−0.112	−0.103	**n.a.**	−0.223*	0.339	0.014
11. Manufacturing department size	−0.251*	−0.173	−0.080	−0.090	0.006	−0.113	−0.131	0.021	0.114	−0.208*	**n.a.**	−0.322*	0.061
12. Sales department size	0.090	0.200	0.037	0.023	0.050	0.059	0.156	−0.096	−0.149	0.347	−0.307*	**n.a.**	0.020
13. Marker (*minority TMT ratio)*	0.144	−0.140	0.146	0.161	−0.012	−0.004	−0.135	−0.228*	−0.187*	0.026	0.072	0.032	**n.a.**
Means	4.136	4.049	4.351	4.112	4.189	3.791	0.569	2.344	11.596	0.019	0.515	0.100	0.038
S.D.	0.493	0.642	0.475	0.535	0.543	0.710	0.157	0.476	1.031	0.026	0.254	0.080	0.244

Notes: Square roots of AVEs are in bold. Unadjusted correlations appear below the diagonal; correlations adjusted appear above the diagonal. Correlations are significant at 0.05 when the absolute values are higher than 0.183. n.a. = not applicable.

We controlled six variables that may influence our dependent variables: competitive intensity, firm age, firm size, IT department size, manufacturing department size, and sales department size. Competitive intensity is included because high competition intensity might exert pressures on firms to achieve AOCs and OA in response to environmental challenges [34]. We measured firm age and firm size as the logarithm of firms' operating years and total assets, respectively. Besides, we measured IT department size, manufacturing department size, and sales department size as dividing the number of the department's employees by the number of firms' employees.

C. Validity and Reliability

We used confirmatory factor analysis to access the reliability and validity of our measures (Appendix B shows more detail). Overall, our measurement model presented a good fit for our data ($\chi^2/df = 424.97/237 = 1.79$; comparative fit index = 0.91; Tucker–Lewis index = 0.90; and root-mean-square error of approximation = 0.08) [57]. To test the reliability, we examined composite reliability and Cronbach's α, which ranged from 0.866 to 0.942 and from 0.753 to 0.915, respectively. All the values exceed the criteria of 0.70, demonstrating the reliability of the measurements [58]. We examined construct validity with convergent and discriminant validity [59]. As shown in Appendix B, the standardized loadings and AVEs ranged from 0.624 to 0.940 and from 0.664 to 0.844, respectively, which were both above the 0.50 recommended level and indicated good convergent validity [59]. The results in Table I showed that the correlations between constructs were less than the square roots of the AVEs of all constructs, revealing good discriminant validity [59].

Table I presents that all interconstruct correlation values were less than the 0.70 criteria, suggesting multicollinearity was not a serious problem [60]. We tested the variance inflation factor values and found that the highest one was 1.88, confirming multicollinearity was not a threat to our study [61]. Furthermore, to reduce possible CMB, this study adopted procedural and statistical remedies, such as the marker-variable technique (see Appendix C for more detail). The results reveal that CMB is not a threat to this study.

V. RESULTS

A. Mediation Effects

To test the mediation effects, we followed Hayes [62] to compute the estimates and significance of the mediation effects using the SPSS (25.0 version) PROCESS Macro with bootstrap methods (5000 bootstrapped samples, Model 4). Bootstrap methods generate good statistical power, especially in the case of small sample size [63]. H1–H4 posits that MC and IA mediate the effect of LGO (H1 and H3) and PGO (H2 and H4) on OA, respectively. Specifically, when testing H1 and H3, we used the following command. PROCESS vars = LGO PGO MC IA controls/y = OA/x = LGO/m = MC IA/model = 4/boot = 5000. We repeated the same command to examine the mediating effect of AOCs on the relationship between PGO and OA by replacing LGO with PGO. Mediation exists when 95% bias-corrected CI excludes 0 [32].

The results in Table II suggest that LGO ($\beta = 0.267$ and $p < 0.01$) and PGO ($\beta = 0.227$ and $p < 0.05$) are positively associated with MC, which is positively related to OA ($\beta = 0.268$ and $p < 0.01$). The bootstrapping results further reveal that both indirect impacts of LGO ($\beta = 0.071$, 95% CI [0.006, 0.163]) and PGO ($\beta = 0.061$, 95% CI [0.001, 0.149]) on OA through MC are positive and significant, supporting H1 and H2. In addition, LGO ($\beta = 0.282$ and $p < 0.01$) and PGO ($\beta = 0.297$ and $p < 0.01$) are positively related to IA, which is positively associated with OA ($\beta = 0.214$ and $p < 0.01$). The bootstrapping results reveal that both indirect impacts of LGO ($\beta = 0.060$, 95% CI [0.006, 0.149]) and PGO ($\beta = 0.063$, 95% CI [0.008, 0.145]) on OA through IA are both positive and significant, supporting H3 and H4.

Additionally, the results displayed that the direct effect of LGO ($\beta = -0.211$, 95% CI [−0.409, −0.014]) on OA is significantly negative when considering MC and IA, making the total effect insignificant ($\beta = -0.080$, 95% CI [−0.282,

TABLE II
MEDIATION EFFECTS OF AOCS

	Model 1	Model 2			Model 3	
	Mass Customization (MC)		Innovative ambidexterity (IA)		Organizational agility (OA)	
Regression results	β	SE	β	SE	β	SE
LGO	0.267**	0.097	0.282**	0.094	−0.211*	0.100
PGO	0.227*	0.095	0.297**	0.092	0.199*	0.097
MC					0.268**	0.100
IA					0.214**	0.104
Competitive intensity	−0.168	0.086	0.054	0.083	0.091	0.087
Firm age	0.044	0.087	−0.026	0.084	−0.037	0.085
Firm size	−0.024	0.084	−0.111	0.081	0.064	0.082
IT department size	−0.031	0.088	0.096	0.085	−0.034	0.087
Manufacturing department size	−0.058	0.086	0.015	0.083	−0.219*	0.084
Sales department size	−0.019	0.091	−0.0724	0.088	0.044	0.089
R^2	0.228		0.280		0.274	
VIF	1.24		1.24		1.37	
Total effects						
	Effect		SE		95% CI	
LGO → OA	−0.080		0.102		[−0.282, 0.123]	
PGO → OA	0.323		0.100		[0.125, 0.521]	
Direct effect						
	Effect		SE		95% CI	
LGO → OA	−0.211		0.100		[−0.409, −0.014]	
PGO → OA	0.199		0.098		[0.006, 0.392]	
Indirect effect (bootstrapping analysis)						
	Indirect effect		SE		95% CI	
LGO→MC→OA (H1)	0.071		0.041		[0.006, 0.163]	
PGO→MC→OA (H2)	0.061		0.040		[0.001, 0.149]	
LGO→IA→OA (H3)	0.060		0.037		[0.006, 0.149]	
PGO→IA→OA (H4)	0.063		0.036		[0.008, 0.145]	

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. SE refers to standard error. CI refers to the confidence interval.

0.123]). Besides, the direct impact of PGO ($\beta = 0.199$, 95% CI [0.006, 0.392]) on OA is significantly positive when considering MC and IA, making the total effect significant ($\beta = 0.323$, 95% CI [0.125, 0.521]). The results provided detailed evidence for the conclusion that MC and IA partially mediated the effects of LGO and PGO on agility.

B. Moderated-Mediation Effects

We adopted the procedures proposed by Edwards and Lambert [64] to test these moderated-mediation effects proposed in H5–H8. Specifically, we adapted the Excel file[1] to calculate the estimates and 95% CI (bootstrapped 5000 samples) of indirect effects at various values of competitive intensity. Table III presented the results.

The bootstrapping results showed the indirect impacts of goal orientations on OA through MC when competitive intensity is at various levels. Specifically, the indirect effect of LGO on OA via MC is not significant ($\beta = 0.055$, 95% CI [−0.014, 0.180]) at low competitive intensity. At high competitive intensity, such an indirect effect is significant ($\beta = 0.106$, 95% CI [0.023, 0.260]). Their difference is not significant ($\beta_{\text{difference}} = 0.051$, 95% CI [−0.048, 0.226]). Thus, H5 is unsupported. When competitive intensity is low, the indirect effect of PGO via MC on OA is significant ($\beta = 0.121$, 95% CI [0.025, 0.281]). When competitive intensity is high, such an indirect effect is not significant ($\beta = -0.018$, 95% CI [−0.121, 0.047]). Their difference is significant ($\beta_{\text{difference}} = -0.139$, 95% CI [−0.347, −0.023]). Thus, H7 is supported.

Additionally, the results show that the indirect impacts of goal orientations on OA via IA vary when competitive intensity is at different levels. Specifically, when competitive intensity is low, the indirect effect of LGO on OA via IA is not significant ($\beta = 0.055$, 95% CI [−0.005, 0.161]). When competitive intensity is high, this indirect effect is significant ($\beta = 0.073$, 95% CI [0.006, 0.195]). Their difference is not significant ($\beta_{\text{difference}} = 0.018$, 95% CI [−0.050, 0.136]). Thus, H6 is unsupported. When competitive intensity is low, the indirect effect of PGO on OA

[1][Online]. Available: http//:dx.doi.org/10.1037/1082989X.12.1.1.supp

TABLE III
MODERATED EFFECTS OF COMPETITIVE INTENSITY ON THE MEDIATION EFFECTS OF AOCS

	Model4		Model5		Model6	
	MC		IA		OA	
Regression results	β	SE	β	SE	β	SE
LGO	0.300**	0.098	0.301**	0.096	−0.211*	0.100
PGO	1.191*	0.095	0.272**	0.092	0.199*	0.097
MC					0.268**	0.100
IA					0.214**	0.104
LGO*Competitive intensity	0.096	0.092	0.042	0.090		
PGO*Competitive intensity	−0.259**	0.098	−0.202**	0.096		
Competitive intensity	−0.132	0.086	0.087	0.084	0.091	0.087
Firm age	0.055	0.085	−0.015	0.083	−0.037	0.085
Firm size	−0.007	0.083	−0.102	0.080	0.064	0.082
IT department size	−0.043	0.086	0.088	0.084	−0.034	0.087
Manufacturing department size	−0.089	0.086	−0.006	0.083	−0.219*	0.084
Sales department size	−0.026	0.089	−0.077	0.086	0.044	0.089
R^2	0.273		0.311		0.274	
VIF	1.34		1.34		1.37	

	Moderator (Competitive intensity)	Indirect effect	95% CI
LGO→MC→OA	Low (−1 SD)	0.055	[−0.014, 0.180]
	High (+1 SD)	0.106	[0.023, 0.260]
	Difference	0.051	[−0.048, 0.226]
LGO→IA→OA	Low (−1 SD)	0.055	[−0.005, 0.161]
	High (+1 SD)	0.073	[0.006, 0.195]
	Difference	0.018	[−0.050, 0.136]
PGO→MC→OA	Low (−1 SD)	0.121	[0.025, 0.281]
	High (+1 SD)	−0.018	[−0.121, 0.047]
	Difference	−0.139	[−0.347, −0.023]
PGO→IA→OA	Low (−1 SD)	0.101	[0.013, 0.223]
	High (+1 SD)	0.015	[−0.025, 0.095]
	Difference	−0.087	[−0.206, −0.008]

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. SE refers to the standard error. CI refers to the confidence interval.

via IA is significant ($\beta = 0.101$, 95% CI [0.013, 0.223]). When competitive intensity is high, such an indirect effect is not significant ($\beta = 0.015$, 95% CI [−0.025, 0.095]). Their difference is significant ($\beta = -0.087$, 95% CI [−0.206, −0.008]). This provides support for H8. Table IV presents all the hypotheses and their results.

C. Reverse Causality Issues and Post Hoc Analyses

To safeguard the viability of results in this study, the potential threat of reverse causality was addressed. We used theoretical, procedural, and statistical remedies to alleviate the reverse causality (see Appendix D for more detail). Besides, we conducted post hoc analyses to examine whether our moderated-mediation results are robust to alternative measures of competitive intensity. These results confirm that the moderating effects of competitive intensity on the indirect effects of PGO on agility via AOCs are consistent with our main analyses (see Appendix E for more detail). We also conducted two analyses to disentangle the moderating role of competitive intensity in the relationships among goal orientations, AOCs, and agility. The results show that competitive intensity does not significantly moderate the direct effects of goal orientations on agility and the effects of AOCs on agility (see Appendix F for more detail). Finally, we conducted an fsQCA analysis to complement the extant analysis and provide the opportunity to examine the conditions of having different variables in different configurations that lead to a higher/lower OA. The outcomes of the fsQCA analysis for

TABLE IV
HYPOTHESES AND RESULTS

Hypotheses	Results
H1: MC mediates the effect of LGO on OA.	Supported
H2: MC mediates the effect of PGO on OA.	Supported
H3: IA mediates the effect of LGO on OA.	Supported
H4: IA mediates the effect of PGO on OA.	Supported
H5: Competitive intensity strengthens the indirect effect of LGO on OA via MC.	Not supported
H6: Competitive intensity strengthens the indirect effect of LGO on OA via IA.	Not supported
H7: Competitive intensity weakens the indirect effect of PGO on OA via MC.	Supported
H8: Competitive intensity weakens the indirect effect of PGO on OA via IA.	Supported

achieving high levels of OA produced three solutions. Solution 1 represents that firms with high LGO, PGO, MC, and competitive intensity could achieve high levels of agility. Solution 2 represents that firms with high PGO and MC along with low innovation ambidexterity and competitive intensity could lead to high levels of agility. Solution 3 represents that firms with high IA and competitive intensity along with low LGO, PGO, and MC could achieve high levels of agility. Only one configuration leads to low levels of OA, which shows that all main variables in our study are absent (see Appendix G for more detail).

VI. DISCUSSION AND IMPLICATIONS

A. Summary of Findings

This study adopted the mediation analysis to examine the mediating effect of AOCs on the relationship between goal orientations and agility. We also adopted the moderated-mediation analysis to examine the moderating effect of competitive intensity on such mediation effects. The empirical analysis supports the proposed research model.

First, our results reveal that PGO has a significant total impact on agility. This result supports our hypothesis and reveals that PGO could guide firms' resource deployment in responding to environmental changes. The finding is consistent with the extant study that found a significant effect of PGO on business outcomes, such as environmental scanning [12]. However, we do not find a significant total effect of LGO on agility. This finding reveals that LGO does not automatically contribute to agility, which is consistent with previous studies that found an insignificant effect of LGO on performance [14]. Although LGO does not directly influence OA, it may contribute to OA indirectly [65]. LGO might impact agility through multiple competing routes, resulting in a null total effect on agility [65]. Although LGO leads to improved competencies, such as AOCs, and consequently, promotes agility, other potential mediators that explain the negative effects of LGO on agility might exist. For example, strong LGO may lead to the excessive expenditure of resources in processing unnecessary market information as opposed to allocating efforts in sensing and responding to market changes, thus inhibiting agility [14]. However, we did not include other mediators that could be potential mediators in our model, which has been acknowledged as a limitation of this study.

Second, the mediation analysis reveals the partial mediation effects of AOCs, i.e., MC and IA, on the relationships between goal orientations and agility, supporting our hypotheses. These results reveal that AOCs could unleash the values of goal orientations in OA [4]. Besides, these results are consistent with orientation–action–outcome framework literature that suggests appropriate actions must be implemented to realize the value of firms' orientation in achieving business outcomes [17], [31].

Third, this study found that competitive intensity weakens the indirect effects of PGO on agility via AOCs, supporting our hypotheses. These results reveal that AOCs are not always effective in transforming the benefits of PGO into enhanced agility, especially in highly competitive environments. Specifically, highly competitive markets increase the difficulty and uncertainty of AOCs building. Firms with high PGO aim to demonstrate competency and intend to pursue attainable goals, which makes them less willing to take customized production and innovative actions in AOCs building with great uncertainty in a highly competitive environment [29]. These findings are consistent with extant literature asserting that the values of orientations are contingent on external environments [23]. However, contrary to H5 and H6, we failed to find moderating effects of competitive intensity on the indirect effect of LGO on OA via AOCs. The possible explanation may be that as competitive intensity increases, learning goal-oriented firms are exposed to the excessive market and technological information because they are disposed to developing new competencies [66]. Such information overload makes it difficult for firms to extract additional marginal benefits from LGO to develop AOCs [66], thereby exerting limited effects on OA. As a result, competitive intensity does not impose moderating effects on the indirect effects of LGO on OA through AOCs.

Finally, by conducting fsQCA analysis, patterns of conditions that facilitate agility emerge. The fsQCA results reinforced and refined the findings of the mediation and moderated-mediation analysis concerning the limits and conditions to which goal orientations add value. Solutions 1 and 2 revealed that the presence of at least one type of goal orientation could lead to agility. Thus, in congruence with H1–H4, solutions 1 and 2 not only confirm the supporting role of goal orientations in promoting agility but also reveal that goal orientations per se may be insufficient to achieve improved agility but should be along with AOCs. Solution 2 further indicates that high PGO, along with low competitive intensity, achieves high OA. This case is consistent with H7 and H8, which propose negative interactions between PGO and competitive intensity for OA. The only divergence is solution 3 in which firms can attain high OA with an absence of goal orientations. This case applies to firms with high IA and operate in a highly competitive environment.

This result highlights the mediating effect of AOCs that, in some cases, can suffice to substitute for goal orientations, which is consistent with the mediation results.

B. Theoretical Implications

This study offers several important theoretical implications. First, it contributes to the OA literature by revealing the differential effects of LGO and PGO. Previous studies mainly identified the antecedents of OA from the perspective of information technology and knowledge management [4], [5], [6], [7]. For example, Lee et al. [4] and Wamba [6] confirmed the positive effect of IT ambidexterity and AI assimilation on OA. Previous studies have recently indicated the potential effects of goal orientations on OA, but they lack empirical examination of such effects [12], [13]. Besides, while previous studies have indicated that LGO and PGO have differential dispositions and may result in different resource deployment patterns [15], [29], few studies have differentiated their effects on agility. Our study enriches the extant literature by empirically verifying an insignificant total effect of LGO but a significant positive total effect of PGO on agility.

Second, this study looks inside the black box of how goal orientations may affect OA by investigating the mediating roles of AOCs. Previous studies have realized the potential effects of goal orientations in achieving agility and provided inconsistent indications and views [12], [14]. Meanwhile, the orientation–action–outcome literature indicates that orientations may not automatically enhance business outcomes and appropriate actions must be implemented [67]. However, studies that examined the underlying mechanisms that transform the benefits of goal orientations into improved agility remain scarce [12], [14]. According to the orientation–action–outcome framework, we find that goal orientations empower agility by stimulating two types of AOCs, i.e., MC and IA. Thus, our study enriches the current studies by confirming AOCs as effective underlying mechanisms to transfer the benefits of goal orientations into OA [12], [14].

Third, our study reveals the contingent role of competitive intensity in influencing the indirect effects of goal orientations on OA. The existing literature on innovation and technology management has examined the moderating role of competitive intensity in building production and innovation capabilities [24], [27]. For example, Abebe and Angriawan [27] investigated the moderating role of competitive intensity in the effect of entrepreneurial and market orientation on innovation activities. Chen et al. [24] explored the moderating effect of competitive intensity on the relationship between IT capabilities and product innovation performance. Gaur et al. [68] confirmed that competitive intensity alters the effect of customer orientation on manufacturing performance. Meanwhile, recent literature proposes that the impacts of goal orientations on business outcomes are affected by environmental contexts [22], [23]. However, the contingent factors that alter the impacts of goal orientations in enabling agility remain largely underexplored. Our study fills this gap by confirming that competitive intensity plays a moderating role that influences the indirect effect of PGO on OA.

Finally, the mediation and moderated-mediation analyses are appropriate in explaining the causal paths of how goal orientations ultimately impact agility, whereas they are unable to explain nonlinear and complex configurations [69]. The fsQCA results help explain the inconsistent indications between goal orientations and OA in existing studies by providing a deeper understanding of the combined effects of goal orientations, AOCs, and competitive intensity on agility. Thus, the fsQCA analysis further complements the extant mediation and moderated-mediation analysis and extends to agility literature [4], [5], [6], [7].

C. Managerial Implications

Our study offers several important practical implications. First, to facilitate agility, we recommend firms distinguish between LGO and PGO. Firms could adopt an orientation toward demonstrating competency to stakeholders, such as customers and competitors (i.e., PGO), to guide resource deployment in sensing and responding to market changes. By contrast, they should recognize that developing an orientation toward improving competency (i.e., LGO) alone cannot improve agility because the downside of LGO (e.g., distracting firms' resources from responding to market changes) offsets the benefits (e.g., learning market conditions) [14]. Hence, we recommend firms aiming to achieve agility focus on PGO and be cautious in developing LGO.

Second, to fully capture the potential of LGO and PGO for OA, firms should engage in ambidextrous production and innovation activities. Firms can leverage LGO and PGO to guide resource deployment to achieve MC and IA [32]. Consequently, firms could achieve agility by customizing products at mass production efficiency and innovation in an ambidextrous approach to meet customers' needs effectively [18], [19]. Thus, firms should transfer the benefits afforded by goal orientations into improved MC and IA, thereby achieving agility.

Third, firms aim to develop AOCs and, thus, agility should have a thorough understanding of the nature of the environment. Firms should evaluate their industry competitors and adapt their goal orientations. PGO is particularly ineffective in enhancing AOCs and, ultimately, agility, especially in cases of intensified competition. Managers in highly competitive environments should be cautious about prioritizing PGO, given that having PGO would miss new market opportunities embedded in innovation and production. However, competitive intensity does not alter the effectiveness of LGO for improving agility through AOCs. Thus, managers could still develop LGO to apply new knowledge to achieve MC and IA, and finally, achieve improved agility in highly competitive environments. Furthermore, managers should realize that, in highly competitive environments, firms with high IA even do not need to develop goal orientations to achieve agility.

D. Limitations and Future Research

Our study also has some limitations. First, although China provides an ideal setting to conduct this research, generalizing our findings to other countries, especially Western countries, must be done with caution. Given that countries in transition and

developed economies may have their features, future research can apply our research model to Western countries to test the generalizability of our results. Second, the existing literature indicates that firms could simultaneously adopt LGO and PGO [29]. Firms may have to decide how to allocate limited resources between learning or goal orientation. Although a need to examine the (in)congruence between learning and goal orientation on OA exists, it is out of our research scope. Thus, future studies could examine such effects. Third, the partial mediating effects of AOCs in the relationships between goal orientation and OA reveal that other potential mediators in bridging these relationships may require exploration. Given the interesting result of the insignificant total effect of LGO on agility, future researchers can explore other mediators, such as resource distraction, which may negatively mediate the relationship between LGO and OA. Fourth, while we collected two-wave multirespondent data to test our model, future studies could utilize longitudinal designs to capture the dynamic nature of goal orientations and their roles in shaping AOCs and, ultimately, agility.

VII. Conclusion

Although anecdotal evidence and theoretical indications on the importance of goal orientations in building OA, investigations on how goal orientations may influence OA and its underlying mechanisms and boundary conditions remain scant. This research, which draws on the orientation–action–outcome framework, solves the following research questions to fill these gaps: First, do AOCs mediate the goal orientations–agility relationships? Second, does competitive intensity play a moderating role in such mediation effects? In this article, we adopted the mediation analysis and moderated-mediation analysis to examine the mediating effect of AOCs on the relationship between goal orientations and agility and the moderating effect of competitive intensity on such mediation effects. We also adopted the fsQCA to complement the mediation and moderated-mediation analysis. The results, which used both two-wave multirespondent survey data and archival data from 387 top managers from 129 firms, offered novel insights into how goal orientations may influence agility by revealing the underlying mechanisms and the contingent factor for such mechanisms as well as various configurations associated with high/low agility.

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