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The Operation Mechanism of an Agile Organization in the Digital Era: A case Study from the Social Media Perspective

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ABSTRACT

There is a need to deeply summarize the operating mechanism of organizations that fought against the COVID-19 pandemic. During the outbreak of the pandemic, a large number of non-profit organizations coordinated the donations of medical materials needed badly by frontline medical professionals. However, how did these organizations operate in the emergent situation after all? Summary of their practical mechanism needs to be deepened. Taking the Gu Dian organization that fought against the COVID-19 outbreak as a case, as the organization coordinated medical material donations, the present study is directed by the framework of an agile organization in the digital era. The research summarizes the agile management mechanism of the non-profit organization that served during the pandemic, and analyzes the effect of digital tools on the non-profit organization. The results show: 1) the operation of Gu Dian organization can be explained quite well by the framework of an agile organization in the digital era, and the case supplements important information for the framework; 2) social media affordances supported the establishment and operation of Gu Dian organization. The results summarize the agile management mechanism of organizations that coordinated the donations during the pandemic, which provide professional implications for organizations to operate fast and effectively in face of emergent disasters.

Keywords: Agile organization management; Agility; Operation mechanism; Digitalization; Social network

1. Introduction

The service mechanism of non-profit organizations during the COVID-19 pandemic needs to be reviewed in further depth. During the outbreak, a large number of non-profit organizations contributed outstandingly by coordinating the donation of medical supplies that were urgently needed by frontline medical staff. However, the mechanism of how these organizations operated effectively to achieve their mission during the emergency needs to be further investigated.

Focusing on the non-profit organizations that played a prominent role in the fight against the pandemic during its outbreak in 2020 [1], this study aims to summarize themechanisms of the services of these organizations. Some of these organizations were created, operated, and subsided temporarily in response to the pandemic. They acted quickly and efficiently and demonstrated the vitality of civic assistance in face of the medical material scarcity. Their characteristics were quite in line with those of agile organizations. They relied heavily on social media such as WeChat and Weibo, demonstrating the characteristics of services in the digital era. Based on this background, the agile organization framework in the digital age [2] is chosen as the theoretical framework, which is quite appropriate for understanding the operation mechanism of these organizations.

The case study on the selected organization can not only make clear the overall framework in which the agile organizations operate, but also highlight specific technologies used in the digital age. The social media perspective expounds the characteristics of the digital age, which in turn adequately explains the instrumental and environmental characteristics of non-profit organizations during the pandemic. Social media plays an integral role in the coordination of donations for non-profit organizations fighting the pandemic. Taking a social media perspective on the basis of the agile organization framework can interpret themechanisms of organizations that fought against the pandemic more vividly and in-depth.

The study summarizes the operation mechanisms of non-profit organizations that coordinated medical material donations in the war against the pandemic, working as agile organizations in the digital age. It also supplements literature on the agile organization and social media. Choosing Gu Dian non-profit organization as the case, this study answers the following two questions: to what extent does the Gu Dian organization follow the agile organization framework in the digital age? What roles did social media play in the operation of the Gu Dian organization?

2. Literature review

2.1 Non-profit organizations respond to crises

Non-profit services play an important role in responding to crises and emergencies [3]. In international and domestic emergency response systems, voluntary services have become a major force [4]. In 2013, when the disaster erupted on the Gulf Coast, voluntary groups improvised decision-making and leadership structures to develop an effective post-disaster response [5]. For non-profit organizations, the management of emergency volunteers is extremely challenging [6]. Grassroots non-profit organizations in China are divided into four distinct categories: aspiring young non-profit organizations, grassroots organizations in transition, start-up charities, and amateur philanthropists [7]. Volunteers for non-profit organizations are often motivated by factors such as the relevance and importance of the scenarios [8]. During the war against COVID-19 in China, volunteers and non-profit organizations contributed to and worked hard on the donation of medical supplies, hospital services, and community support, which provided important aid to China's effective response to the pandemic.

2.2 Social media support non-profit organizations

Non-profit organizations adopt social media for a variety of volunteering activities. Social media is an important element of contemporary social life. Social media can build online communities that benefit stakeholders in terms of information, influence, and cohesion [9]. Social media provides information, action, and community affordances [10]. In terms of information affordance, it is worth emphasizing the abundance of information provided by social media [11]. Social media provide significantly richer information than traditional media [12]. The action affordance of social media mainly refers to the ability of social media to motivate people to act around specific events through mes-

saging and interpersonal communication. Community affordance connotes that 1) social media can capture community knowledge, 2) vivid social media posts can increase levels of community engagement, and 3) social media posts can gain community attention [13]. The use of social media helps build and strengthen the agility of organizations. The application of social media can facilitate the information exchange needed to strengthen organizational agility [14]. Communication collaboration within organizations is enhanced when teams adopt various social media [10]. Enhanced communication may also improve the leanness of organizations.

Chinese non-profit organizations are active on WeChat and Weibo [15]. Social media empowers coordination, collaboration, and service co-creation [16] for non-profit and other organizations. The information, action, and community affordances of social media contribute to voluntary activities [8].
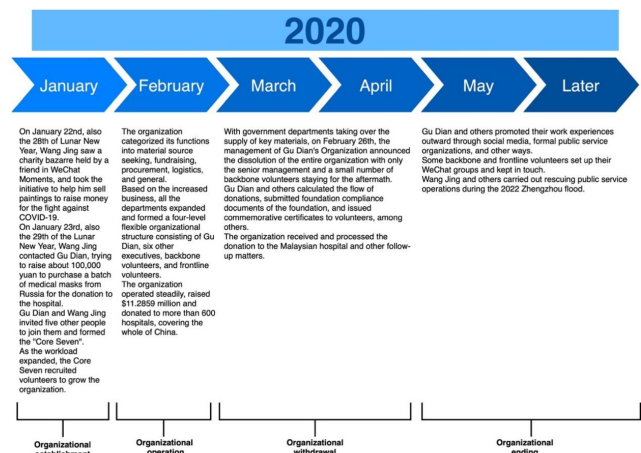
2.3 Agile organization

International research on agile organizations has become a cutting-edge hotspot in the last two decades, while Chinese research on this topic has also been increasing in the last decade. Qian Yu, Sun Xinbo and Sun Haobo's review of the connotations, characteristics and research framework of agile organizations in the digital age [2] is of great significance. An agile organization is capable of seizing opportunities intelligently and proactively, responding to threats and making timely, effective and sustainable changes [17], and is a new organizational model that constantly adapts to external changes [18]. Agile organizations have two main characteristics: agility and leanness [2]. Agility emphasizes the organization's immediate response and rapid delivery of results. The availability of information, quality of communication, knowledge sharing and information about the effectiveness of work need to be guaranteed to build organizational agility [19]. Three factors are dependent to ensure the agility of organizations: operation in small teams around small workloads, delivery of value to customers and other stakeholders, and a fluid, interactive and transparent network [20]. The leanness of organizations emphasizes the professionalism of the organization's work processes and the quality of outcomes.

3. Methods

A single-case study [3] was conducted in this research. The case is a non-profit organization that contributed significantly to the coordination of medical donations during the COVID-19 pandemic in 2020, namely Gu Dian Non-profit Organization against the COVID-19. The GuDian organization committed its mission during the pandemic outbreak and used social media including WeChat extensively, which superbly exemplifies the characteristics of agile organizations in the digital age, while the way it operated was particularly typical [21]. The case study was conducted with reference to the paper by Zhou Wenhui, Liu Dewu and Zhu Sai [22].

3.1 Background

From the perspective of overall practice and performance, Gu Dian Non-profit Organization against COVID-19 took the leading position among all the common non-profit organizations that coordinated medical donations during the war against the COVID-19 pandemic. **Figure 1** below shows the key events of the organization from its founding, operation, withdrawal to ending stages.

Figure 1. The development stages of Gu Dian Non-Profit Organization against the COVID-19.
The figure was drawn based on the interviews and other materials provided by the organization.

3.2 Data collection

Three types of data were collected for this study that were particularly applicable to the case study: interviews, work files and archival records. The specific primary and

Table 1. The qualitative data collection.

Data type	Data source	Data length	Data volume	Data content	Code
Primary data	Interviews	18.50 hours	243.5	A total of 19 core managers, backbone and front-line volunteers, such as GuDian and Wang Jing, were interviewed about their voluntary experiences	I
	Work documents of core volunteers	170 pages	31.3	Work records of Gu Dian and two backbone volunteers	W
	WeChat group chats of teamwork	366 pages	117.9	Dialogue records of 500-people WeChat groups participated by multi-parties responsible for the material coordination	C
	Shared articles and other materials in WeChat groups for team cooperation	327 pages	50.7	Articles from official accounts and chat records from other groups shared in the 500-people WeChat groups responsible for the material coordination	F
	Articles in team's WeChat official account	87 pages	28.5	9 articles about team non-profit work released through GuDian's professional official account	A
Secondary data	Coverage of the team's Work on major websites	175 pages	37.7	Reports on the Gu Dian organization work by Tencent and The Paper websites	N
	Report on the Non-profit Sector that fought against COVID-19	178 pages	39.6	Reports on the work and situation of the non-profit sector during the COVID-19 pandemic	R
Total	Seven data sources	18.50 hours+1303 pages	549.2		

secondary data are shown in **Table 1** above.

A total of 18 interviews with 19 volunteers at different levels were conducted in three stages in the study. The interviews were audio-recorded with the permission of the interviewees and transcribed. Most of the interviews each lasted one hour approximately. Other qualitative data such as volunteer work documents were also collected.

3.3 Data analysis

The research team consisted of over ten researchers, working in teams of two to code and analyze the data collected. The data analysis followed the coding process advocated by Deterding and Waters [23], i.e., to figure out the relationships between concepts via indexical coding, and then analyze them layer by layer to answer the research objectives. Referring to the framework for agile organiza-tions in the digital era [2], the coding was divided into three stages. The first stage was the first-order coding based on the research framework. In this stage, each two-person team coded each document as follows: each person coded independently, and then the two persons discussed to agree on the codes and eliminate any differences. The second stage was second-order coding based on the first-order coding. The third stage formed constructs and refined them.

4. Results of the case study

The case study results discovered the overall operation of the Gu Dian organization as an agile organization in the digital age and the patterns of the organization being created and operated with social media.

4.1 The practical framework of the Gu Dian organization as an agile organization in the digital age

Gu Dian's non-profit organization against the COVID-19 presented a practical framework for agile organization in the digital era as shown in **Table 2**. The three-level framework in **Table 2** is drawn based on the framework of Qian Yu, Sun Xinbo and Sun Haobo et al.'s study [2]. Notably, the table adds significantly to the first level and enhances consistency of conceptual connotations and forms with case interpretations. The typical quotes cited were translated from Chinese to English in drawing the table after all coding was done.

Organizational influences

The factors influencing the establishment of the Gu Dian organization as an agile organization are divided into technological and organizational ones. In the respect of technologies, the factors influencing the establishment of the organization include the social media as a prominent role, data and its analytics, and cloud computing. Gu Dian, Wang Jing and others exchanged information, made decisions, carried out actions and facilitated the construction of the Gu Dian organization in a rather short period of time, by fully suing social media such as WeChat. They used WeChat questionnaires and other tools for data collection and analysis, and made decisions and acted accordingly. The cloud computing platform allowed the organization to develop a logistics tracking mini-program. Organizational factors that influence the establishment of the Gu Dian organization cover the culture of agility and leadership style. The culture of agility in the organization includes lean entrepreneurship, agile principles, agile thinking, and agile action, which are demonstrated by the vigorous and resolute behaviors and rapid pace of the team creators. The styles of leadership in the Gu Dian organization involved empowering, sharing, remote, transformational and distributed, as well as the practice of fundamentals of leadership such as accountability and caring.

Triggering mechanisms

The establishment of Gu Dian's organization was triggered by both technical and organizational factors improving the subjective/objective state of the agile subjects and facilitating operational efficiency. Messages on WeChat prompted Wang Jing and Gu Dian to raise funds online and establish the Gu Dian non-profit organization. The organization was supported by formal charity foundation and it posted suggestions on fundraising and promotional articles on Gu Dian's WeChat official account. Hundreds of thousands of people gave extremely positive feedback on these suggestions and articles. The organization received a large number of donations and attracted many other people to join them in volunteering. This process shows that a large number of people with shared values have united together for this good cause. The "four meetings" of the Gu Dian organization's "core group of seven", especially the "emotional catharsis meeting" every evening, were occasions for senior members to empower each other psychologically. WeChat and its moments have played an important role in gaining public trust and support for the organization. The workflow of the Gu Dian organization was facilitated by social media, agility culture and leadership style. Social media such as WeChat greatly reduced the cost of information exchange and increased the efficiency of handovers. The culture of agility, namely lean entrepreneurship, agility principles, agile thinking and agile acting, has motivated the members of the organization to act immediately and with high intensity at all times to complete the process of fundraising, supply purchase, material delivery, and sign-off completion with the hospitals as quickly as possible. Transformational and shared leadership styles enabled Gu Dian and the "Core Seven" to make important decisions about scaling up fundraising and donations quickly in the early stage.

The mechanisms of organizational operation

The operation of the Gu Dian organization reflects the closed-loop coupling between the five elements of an agile organization in the digital age. The digital value proposition of the Gu Dian organization is to carry out voluntary service through social media to achieve its mission of "delivering first-class supplies to frontline healthcare workers", its vision of "saving one more little fish" and its core values of "quality, precision, and transparency." The core values were matched with the thirst for supplies demonstrated by the healthcare workers. The agility of Gu Dian organization was demonstrated by its top management to rapidly sensing the development of COVID-19 and material supplies, making lean decisions at critical moments, executing efficiently

Table 2. The practical framework of the case based on the evidences.

Construct	Dimension	First-order concept	Typical quote
Influencing factors of agile organizations	Technological factors	Social media	"Mainly relied on WeChat and Tencent meetings to work and the others include Shimo Office with which a lot of work was finished." (I2)
		Data and data analysis	"These two collaborative tools are mainly used: one is for the front-end data collection; the other is for the back-end data collection and sharing…" (C4)
		Cloud computing	"Amazon has provided us with some relevant technical support for free, that is, they have provided the network and computing resources. Then we formed a group from our own team to do the development. And then we want to be able to put that data in control." (I4)
	Organizational factors	Culture of agility	"The 29th, I think, the night I was talking to my friend who is a painter and saw he was also posting the painting donation. I just saw that, and I said let's do it. I'll post it for you on Moments. I'll put out a call, and see how much I can donate. I said I'd buy masks. And then my friend gave me the painting. But the painting didn't sell. I told Gu Dian on the 30th. It means we've been doing it since Chinese New Year." (I4)
		Leadership style	"Sixteen years later, the small fish on the beach achieved a magnificent Gu Dian! We are grateful to Gu Dian to be our paragons of virtue and share resources with us!" (C12)
Triggers for agile organizations	Improving the subjective/objective state of the agile agent	Gathering people with shared value	"During the process, everyone is thinking I have to hurry up. Everyone's mindset is not that Gu Dina should do it, but what people in charge of contact should do then. Everyone is dedicating because I think they are really called together by the public need." (I1)
		Psychological empowerment	"It's just that it's a real breakdown right then and there. But it's just after such an emotional catharsis that you're relaxed. You feel like you have someone to carry it with you. That's why it's so important." (I5)
		Winning public trust and support for teams	"Firstly, they trust Gu Dian. Then secondly, they trust us as an organization because all our accountants have published the amount of money we received every day. That's the reason why they also trust us as an organization. Then people are willing to help us to forward and also believe that it is right to give us the money." (I5)

Construct	Dimension	First-order concept	Typical quote
	Facilitating operational efficiency	Social media reduces communication costs and promotes the Efficiency of workflow	"Each of us claimed our duty when we entered the group. For instance, I might be responsible for number 30 to 50, then lines 30 to 50 in the Shimo file are mine. Everyone else is off the hook." (I12)
		A culture of agility promotes flexible and efficient responses	"I think the most important thing is that there is no sense of boundaries among the seven core members of the organization. It's like if I might have other jobs today, everyone else can fill in." (I5)
		Leadership style scales up the business	"It is hoped that those with useful resources will be able to lend a strong helping hand. Please see other articles for specific requests for donated materials." (F12)
Closed-loop operating mechanism of an agile organization	Digital value proposition	Users' demand attributes	"Hello, we, Huainan Chaoyang Hospital in Anhui Province, would like to apply for 100 sets of one-piece protective suits and 5,000 masks." (C4)
		Organizational value attributes	"We named our WeChat group after our values, which are Quality, Precision and Transparency. Quality means that things must be real. Precision is the only we can do after the government does the big side of things. The third is transparency, and that's what our values are from the beginning." (I1)
		Matching of organizational value attributes to user demand attributes	"The most valuable, well, I think is the contact with the needs of doctors because I can really feel their urgency ...... feel like they're benefiting from it as well. We really feel like we can help them." (I7)
	Agile capabilities	Rapid sensing	"At that time, because of the COVID-19, many factories were not producing or working. Also, people felt that they were risking their lives by going to work at the time, so many people did not work." (I9)
		Accurate decision-making	"It seemed like we did too much work at the beginning to verify doctors' identities and needs one by one, and to build WeChat groups for communication. But these were actually some of the best things we did during the launch of the whole project." (N1)
		Efficient execution	"Basically, we had a morning meeting at nine o'clock and finished our work in the evening every day. The party was usually at eleven or twelve o'clock after which we work for another one or two hours." (I10)

Table 2 continued

Construct	Dimension	First-order concept	Typical quote
		Explicit communication	"During our four daily meetings, each person would report on the progress of the part of the work they were responsible for, the parts that needed to be coordinated, and the things that needed to be decided." (I10)
		Task and time management	"Updated: i. Project Summary: Overall Data Summary. ii. Needs Analysis: What are healthcare workers really lacking⋯To be updated: iv. Media linkage: how to make people understand a non-profit initiative better⋯" (N1)
		Teamwork and management	"I'll find out what he's good at first. Then we'll go over that when we assign work. That is, what we are going to do now, what we are going to collect." (I7)
		Control of risk and cost	"Two lines of risk control: One is whether these goods are real or not, and the other is whether these goods can meet the standard of hospitals when it goes into the customs. These two risk controls were done by professionals." (I1)
		Assimilating ideas, reflecting, accumulating and summarizing	"In the meantime, I'm going to review today's work by learning from recapping." (I1)
	Agile structures	Flexible self-managing structure	"We discussed material distributions together. However, later when the workload was particularly heavy and others needed to take on other tasks, the distribution responsibility fell on me." (I8)
		Stable platform-like structure	"We were actually the front-line employees. Um, those volunteers then were probably responsible for background work, because they were mainly dealing with the logistics information and compliance information." (I7)
	Agile workflow	Analytical	"Good domestic stocks are small and there is price gouging. So we mobilized the folk around us to source goods from several directions around the globe." (N3)
		Adaptive	"We started recruiting volunteers as soon as we could gradually sort out our needs from an unorganized state." (I8)
		Automated	"They didn't need to report because all of our data was summarized on the Shimo document. And when we needed the numbers, we just sifted directly on the specific document." (I7)

Table 2 continued

Construct	Dimension	First-order concept	Typical quote
		Flexible	"But these people they were all together in a big WeChat group. Whenever a task came up, I would talk in the group and whoever had time would just raise his/her hand." (I8)
		Professional	"About masks! The N series is the American standard, the KN is Chinese, and the FFP is European." (C10)
		Disciplined	"In terms of contact on foundations, all purchases, whether domestic or foreign, must be accompanied by standard invoices. The names of hospitals delivered to and the number of packages should be recorded with photos." (I10)
		Fast	"If you're going to edit a document, you need to get it done quickly and released it in a hurry. It'll work for everyone." (I6)
		Closed-loop	"All of our tasks could be done in a closed-loop way: yes, we have vouchers for everything. For instance, how much did we pay? How many things did we buy? How many masks and gloves were there actually? How thick were the gloves? Where did the masks come from? That is to say, which medical manufacturers were the masks produced by?" (I19)
	Agile development	Incremental investment	"In just a few hours the original goal of 1 million fundraising was achieved ···Currently our team has matched with 544 medical institutions across China, and there is a huge pressure on the demand for supplies ···Our management committee discussed with the Shanghai United Foundation and decided to adjust the fundraising goal to 1.5 million yuan." (N10)
		Agile delivery	"When it comes to the cities, troubles related to trunk logistics and the last kilometer cannot be ignored. That's why some of our local volunteers will also be working on the last kilometer." (I4)
		Step-by-step development	"Then Liang also temporarily made a mini-program-like stuff. When you directly scan the code to enter the name of your hospital, and also enter some other information, you will be able to see your logistics directly, just very quickly. He made this in just a few days." (I5)
Outcomes of agile organizations	Organizational performance	Market performance	"Gu Dian's Non-profit Organization Team is a prime example of outstanding awareness of responsibility and ethics, as well as competence, in the fight against the COVID-19 pandemic." (N9)
		Operational performance	"Six project briefs with a cumulative readership of over one million times were released." (N1)

Construct	Dimension	First-order concept	Typical quote
		Business perfor-mance	"As of 21:00 on February 25th: total income: 11.2850 million yuan; total expenditure: 10.8208 million yuan; total balance: 0.4651 million yuan." (C13)
	Organizational inno-vation and improve-ment	Innovation on orga-nizational business model	"The project review report contains 10 parts: I. Project Summary: Overall Data Summary ⋯IX. Other Possibilities for Non-profit Services: In the war against COVID-19, in addition to the mask, there are many great possibilities. X. How can citizens better participate in non-profit services?" (N1)
		Development of dig-ital products	"We have since rewritten the entire handbook." (I16)
		Digital service	"From the very beginning, every article Gu Dian posted on his official account was an experience post. It was like a weathervane, a guidebook⋯ Many work methods of the Gu Dian Organiza-tion were then followed by Zhuo Ming Volunteer Team." (I7)
	Organizational devel-opment and change	Aftercare for organi-zational Projects	"Taking internal and external considerations into account, we will gradually end the material pro-curement and turn the project from the support stage to the follow-up support stage." (C10)
		New project expan-sion	"Curve 2: The team thinks about how to find the next focus." (N1)
		Organizational with-drawal	"This group will be disbanded at 23:00 on Febru-ary 26th as a precautionary measure to avoid the situation where no one is maintaining the group and someone is trying to fish in troubled water." (C13)
	Benefits for organiza-tional members	Self-fulfillment	"I think the first thing is to help the people in-fected. And then the second thing is that they're actually finding out that this is reliable after getting involved. That's because you see a lot of things be-ing implemented. Although it's hard, but it's all being implemented." (I9)
		Increased interest in non-profit service	"I met a lot of people who are doing charity work through this event. Then I discovered that I can do a lot of things and that I'm really good at doing charity work." (I7)
		Increased levels of organizational belonging and commitment	"Our core team has over 100 volunteers in total. There is still a strong sense of belonging." (I8)
		Professional devel-opment.	"Some of the mini-programs and other operation methods that we used in the late phase were main-tained. I'm going to just follow them along after then." (I7)

across the organization, communicating explicitly on inter-organizational levels, solving problems in a timely manner, managing tasks and teamwork, preventing risks and controlling costs, reflecting and taking stock in a timely manner. The structural agility of the Gu Dian organization in-cluded a self-managing structure that flexibly formed, divided and managed volunteers, and a stable platform structure that provided a strong middle and back support for the frontier and drew on a wide range of external resources. Agile workflow in the GuDian organization showed analytical, adaptive, automated, flexible, professional, disciplined, fast and closed-loop traits. The agile development of this agile organization was reflected in the incremental investment by scaling up fundraising and volunteers in the early stage, rapid delivery of supplies to frontline hospitals, and step-by-step development of the mini-program for supply donation tracking and volunteer handbook writing and so on.

Organizational outcomes

The outcomes of the Gu Dian organization are reflected in four aspects: organizational performance, organizational innovation and improvement, organizational development and reformation, and benefits for organizational members. The organizational performance included market performance, operational performance and business performance. In the market aspect, the organization increased the number of hospitals and healthcare workers, provinces, cities and even the countries the organization served. The operational performance was the continuous expansion of the organization's internal planning and the continuous expansion, as well as the segmentation and adjustment of departmental functions. The operational performance was manifested by the total materials raised and delivered by the organization that was worth 11.2859 million yuan. The organization's innovation and improvement were demonstrated by the digitalized innovation of the non-profit service model, the development of digital products including handbooks for online volunteers, and the release of information needed to enable the delivery of digital services. The organization's development and change were reflected in its late persistence in aftercare work, while actively seeking new projects and opportunities, and ultimately exiting the market of donation coordination in a timely manner. The organization's benefits for its members included the realization of the volunteers' self-worth, the enhancement of the vol-

unteers' interest in non-profit service, the increase in their level of belonging and commitment to the Gu Dian organization, and the advancement of the volunteers' professional development.

4.2 The role of social media for organizations

Effect of social media technologies on the establishment of organizations

Gu Dian and Wang Jing used social media including WeChat extensively to obtain and perceive information about the COVID-19 and established the Gu Dian organization from the very beginning. The social media functions used by the Gu Dian organization included various functions on WeChat, the interaction of Tencent meetings, and the online collaboration of cloud documents. Social media technologies empowered the establishment of the Gu Dian non-profit organization in terms of both improving the subjective/objective state of the agile subjects and facilitating operational efficiency. The functions of WeChat such as its moments and official account, for instance, helped Gu Dian's team to set up and expand rapidly, and also facilitated the operational efficiency of the organizational processes through communication and coordination.

### *Effect of social media on organizational operation and innovation*

The Gu Dian organization used social media extensively, enabling the work of the organization to be carried out almost entirely online during the time of COVID-19 lockdown. In the organization's closed-loop operation, social media including WeChat enabled the organization to capture users' demand attributes and demonstrate its value attributes, enabling the organization's agility including rapid perception, lean decision-making, and efficient execution. Social media also established and maintained the organization's agile structure by allowing it to work with agile processes, as well as developing the agility. Social media was also a core carrier that enabled the GuDian organization to operate innovatively. Without social media tools such as WeChat, the innovative non-profit service of the Gu Dian organization would be nearly impossible.

5. Discussion

The above findings summarize the operation mechanism of some non-profit organizations that coordinated medical materials in their fight against the COVID-19 pandemic, represented by the Gu Dian organization, which worked in the form of an agile organization in the digital age. In addition to condensing this mechanism, the research results add to the literature on agile organizations and social media respectively.

5.1 Validation and addition to the research framework of agile organizations in the digital era

Figure 2 below is a diagram of the practical mechanism of an agile organization in the digital era, based on the research framework of Qian Yu et al. [2] and the analysis of the Gu Dian organization case.
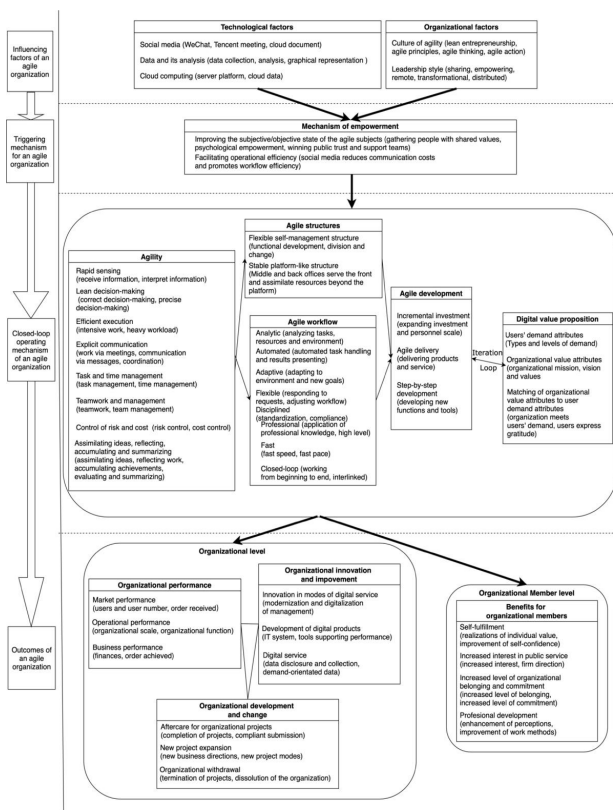
Figure 2. The practical mechanism of an agile organization in the digital era.

The diagram was drawn based on Qian Yu et al.'s [2] framework and the case study.

The framework in **Figure 2** validates most of the elements in Qian et al.'s [2] framework and also makes addi- tions to each of the four parts of the framework for an agile organization operated in the digital age.

Supplement to the influencing factors for agile organizations in the digital age

The influencing factors for agile organizations in the digital age found in this case study are still divided into two categories: technology factors and organizational factors. On such basis, the study results revealed different and new information regarding both technology and organizational factors. Regarding the technology factors, the study did not find big data, artificial intelligence, and blockchain factors, but identified the prominent role of social media especially the important one played by WeChat. Regarding the organizational factors, agile action is added in agile culture, which refers to the organization's fast, high-quality action being considered as an overarching principle; transformational leadership and distributed leadership are added to leadership

Supplement to triggering mechanisms for agile organizations in the digital age

The triggering mechanisms for agile organizations in the digital age found by the present case study remain consistent with the literature on the two types: improving the subjective/objective state of the agile subjects and promoting workflow operation efficiency. Complementary to this, the Gu Dian organization embodied the specific connotation of these two triggering mechanisms. The subjective/objective state of the agile subjects in the Gu Dian organization was improved in three ways: gathering people with shared values, psychological empowerment and enabling the team to gain public trust and support. The workflow of the Gu Dian organization was facilitated in three ways as well: the use of social media reduced the cost of communication and improved the efficiency of work handovers, the culture of agility facilitated flexible and efficient responses, and the leadership style scaled the business. The newly found connotation of the triggering mechanisms can be generated appropriately to understanding some agile organizations in the digital age.

Supplement to the closed-loop operation mechanism of agile organizations in the digital age

The closed-loop operation mechanism of agile organizations in the digital age found in this case study is still the coupling among five elements. However, the study complemented that the GuDian organization presents richer and more specific content in each of the five elements. In digital value proposition, the Gu Dian organization's values matched to users' demand. In agility, the ability of explicit communication, task and time management, teamwork, risk and cost control as well as assimilating ideas, reflecting, accumulating and summarizing are added. In agility processes, the case study results add professionalism, standardization, swiftness, and closed-loop characteristics. In addition, the new framework explains specific connotation in the parentheses, for each specific agile capability for instance, for each foundational level term [18].

Supplement to the outcomes of agile organizations in the digital age

The outcomes of agile organizations in the digital age found in this case study validate the aspects of organizational/business performance and innovation and improvements of Qian et, al.'s [2] research framework. In addition, the results reveal the outcomes of organizational development and change as well as member benefits. Specifically, the outcomes of organizational development and change include aftercare for organizational projects, new project expansion and organizational withdrawal. The outcomes of organizational member benefits include organizational members' self-fulfillment, increased interest in non-profit service, increased levels of organizational belonging and commitment, and individual professional development.

5.2 About social media

Social media enables the operation of non-profit organizations. The information, community and action affordances of social media enable the GuDian Non-profit Organization to work online and fulfill its mission. Based on the findings of the case study, the impact mechanism of social media for an agile organization in the digital age is proposed in this paper as shown in **Figure 3** below.
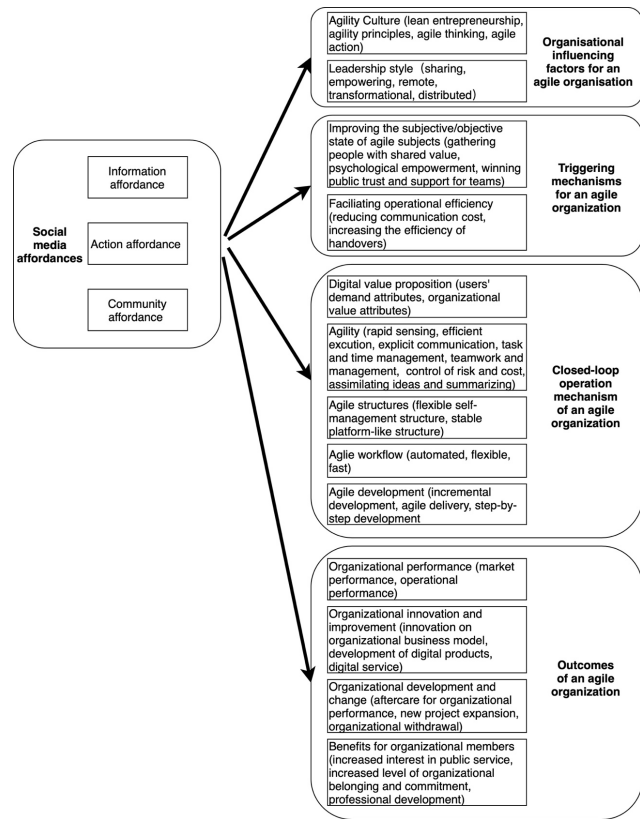
Figure 3. The impact of social media on the practice of an agile organization in the digital era.

The role of information affordance of social media

The information affordance of social media can convey agility culture of the organization, transmit the leadership style, enable the members of the organization to access the sharing of each other's values, obtain psychological resources, disclose organizational information to the public and get public trust and support, reduce the cost of information communication [24]. Social media can also be used to receive information about users' needs, provide information about organizational value, and assist in rapid perception. Social media supports putting to good use the agility capabilities and the closed-loop operation of the agile organization. Information affordance also allows the organization to obtain the information necessary to achieve performance.

The role of action affordance of social media

The action affordance of social media also plays a role in each of the four phases of the operational framework of an agile organization. For instance, social media makes a large portion of voluntary coordination visible on social me-

dia, attracting the attention of individuals and building confidence and trust in each other' s work. It also allows the altruistic and self-interested motivations of volunteers[25] to be put into practice. The role of social media in teamwork and management is also evident. Regarding this, the results of the present case study are consistent with a finding in the literature: well-coordinated teams enjoy using social media in their project work[9].

The role of community affordance of social media

The community affordance of social media also plays a role in each of the four stages of the operational framework of an agile organization. Similar to the finding in literature that social media provides psychological resources for non-profit organizations[26], the current study also found that the community affordance plays an important role in the enhancement of psychological capital in the agile organization. The community affordance of social media in the Gu Dian organization contributed to team collaboration as well and therefore may have improved the team efficiency [27] and team knowledge sharing [28]. The impact of community affordance on organizational members' gains found in the case corroborates the literature finding on using social media for group identity building [29]. It also indicates that community affordance strengthens organizational members' belonging and identification to the organization, among others.

6. Conclusions, contributions, and future research directions

This case study summarizes the operational mechanism of a leading non-profit organization that coordinated the donation of medical materials, while worked as an agile organization in the digital age [2]. The study also identifies the role of social media for this kind of organizations.

The findings of this study are informative for non-profit management. The findings will guide the organizations to strengthen their response to the challenges of emergency disasters in the form of agile organizations. In the digital era, non-profit organizations can learn from the experience of the Gu Dian organization in this study, and build and activate agile organizations with the assistance of internal and external conditions to achieve agile operation and management. This study also proposes the specific roles of

social media on the influencing factors, triggering mechanisms, closed-loop operational mechanisms, and outcomes of agile organizations in the digital age. These revealed specific mechanisms can inspire relevant organizations to use social media to work professionally and quickly.

This study is limited in two main ways. First, the nature of the single case study limits the scope within which the findings can be generalized. The framework of the organization coordinating material donation as an agile organization and the mechanisms of social media proposed in the findings of this study need to be tested in more types of organizations other than non-profit ones. Second, the case of the non-profit organization in this study serves the unprecedented and unique global emergency disaster of COVID-19. Even within the non-profit sector context, the findings need to be further tested in future disasters or emergency situations such as floods and earthquakes.

Author Contribution

Xiaoping Tong as the single author contributes to the whole article.

Conflict of Interest

The author declares that she has no conflicts of interest in this work.

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Data Availability Statement

The data used in this research is available upon request of reader.

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