The Impact of Philanthropy During Humanitarian Disasters: A Review of the Literature

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Philanthropy through nonprofits is a critical component of relief throughout worldwide humanitarian disasters. Humanitarian disasters are increasing each year, yet a comprehensive time-sensitive model has not been created nor adopted by all nonprofits, or better yet, prior to a disaster. To better understand the benefits and challenges of philanthropy during a humanitarian disaster, a review and analysis of the literature were conducted, and research gaps were identified. The findings of this review indicate that philanthropy during humanitarian disasters is critical to reconstruction and enhancement efforts, and donors are one of the most valuable resources available.

Keywords: nonprofit, supply chain management, philanthropy

INTRODUCTION

As defined by the Federal Emergency Management Agency (FEMA), a disaster is "an occurrence of a natural catastrophe, a technological incident, or human-caused event that has resulted in severe property damage, deaths, and or multiple injuries" (FEMA, 2009). A comprehensive analysis of the components of philanthropy during humanitarian disasters, such as communication, technology, stakeholders, and gift types, has led us to the following propositions:

- Leveraging media and new advances in technology will ultimately help provide an adaptable model for deploying aid at each stage of a humanitarian disaster.
- Stakeholders, such as, donors, volunteers, and government organizations, have different needs and understandings of their roles in a humanitarian disaster.
- Data-driven analysis can help determine the most efficient and effective measures that will provide the greatest positive impact on all stakeholders, and in particular, on the affected country or region.
- Education about gift types can help donors and nonprofits contribute the most-needed resources for those experiencing a humanitarian disaster.

The mapping of philanthropy long before a disaster strikes is relatively non-existent. According to John and Ramesh (2016), it is nearly impossible to accurately predict the scale of devastation prior to a humanitarian disaster. They note that "the lack of strategic intent for developing a supply chain prior to the disaster means there is a lack of experienced logisticians" (John & Ramesh, 2016). According to Franklin and Todt (2014), "without pre-disaster resource planning, private sector organizations capable of providing essential goods cannot design their plans to ensure that essential resources are available after an incident." It is imperative that adaptable models be established to provide nonprofit organizations with guidelines to help manage aid prior to, during, and following a humanitarian disaster.

One possible way to facilitate such strategies is to leverage communications, technology, stakeholders, and knowledge of philanthropic gifts and donors as they apply to the affected governments and those supporting them. In short, a comprehensive, inclusive database with resources, models, and strategies that will work best for a given humanitarian disaster could provide nonprofit organizations with the resources to formulate well-defined philanthropic plans. These strategies could be scalable, depending on the size of the nonprofit organization or upon the type of disaster, natural or man-made.

To provide context for these challenges, through a detailed analysis of the literature this article aims to provide an understanding of the following: (1) how communication and technology are currently utilized to support nonprofits during humanitarian disasters, (2) what stages make up a humanitarian disaster and how nonprofits can plan for philanthropic support throughout each stage, and (3) what the underlying complexities of stakeholders and gift types are. The ultimate goal is to identify research challenges and highlight areas needing more information, which addressed would allow for a more effective approach to nonprofit fundraising and enhance philanthropic efficiency during a humanitarian disaster.

The remainder of this paper is organized as follows: Section 2 introduces the approach used to analyze the literature to identify research gaps. Section 3 reviews the evolution and current state of the stages of humanitarian disasters. Section 4 explores the roles of communication and technology in the work of nonprofits in a humanitarian disaster. Section 5 presents a detailed analysis of the philanthropic process and the application of various gift types. Section 6 acknowledges the stakeholders' role in fundraising during a humanitarian disaster.

APPROACH

This article presents a detailed analysis of the role of nonprofits in a humanitarian disaster, with a focus on philanthropic support from various constituents, and research directions for practitioners and researchers on how to apply supply chain management to increase the efficiency and impact of donations during humanitarian disasters.

We begin by defining a humanitarian disaster as an event that affects a country or region, negatively impacting the citizens and the physical environment. Humanitarian disasters can be both natural, such as earthquakes, hurricanes, and floods, or man-made, such as terrorist attacks. These disasters wreak havoc on the economic status of the area affected. We then review research from scientific journal articles obtained primarily via Google Scholar, although we also cover additional articles and specialized sources discovered through the Google Scholar articles.

Our search included the terms *nonprofit*, *supply chain management*, *disaster relief management*, *humanitarian*, *philanthropy*, and *donor*. We also found other keywords used interchangeably with some of these terms. For example, in lieu of *nonprofit*, the literature contained references to *non-profit*, *non-governmental organization*, and *humanitarian organization*. Some authors utilized acronyms, for example, HO for a humanitarian organization, or NGO for a non-governmental organization.

All of the initial sources were analyzed by examining their title, keywords, and abstract. All the sources that were then considered to be relevant were examined further by analyzing the introduction and conclusion. The remaining articles were read in their entirely and evaluated using a grounded theory approach (Luna & Pennock, 2018). Throughout the analysis, nonprofit fundraising strategies emerged in

thematic clusters, based on the stages of a disaster stages, communication and technology, finance and philanthropy, and social.

DISASTER STAGES

A historical analysis of humanitarian disasters, particularly natural disasters, shows an overall increase in the occurrence of disasters and philanthropic support (Williams, Page, & Petrosky, 2014). Over the last four decades, the world has witnessed more than 6,500 disasters (including both natural and man-made), which have affected more than five billion people across the globe. The Centre for Research on the Epidemiology of Disasters (CRED) has reported that the combined consequences of all the disasters has left over 180 million people homeless (John & Ramesh, 2016). This section discusses the three stages of a disaster and the literature on philanthropic support during each stage.

TABLE 1
DISASTER STAGES

PRE-DISASTER		
Mapping Resources (scheduling resources & utilization)	Definition	(Luna & Pennock, 2018)
	Centralizing Distribution	(Scarpin & Silva, 2014)
	Securing Facilities	(Franklin & Todt, 2014; Dubey & Gunasekaran, 2016)
	Flexible & Proactive Planning	(Franklin & Todt, 2014; Dubey & Gunasekaran, 2016)
Reducing Lead Time (effect of lead time on philanthropy & resources)	Reduction of Lead Time	(Buddas, 2014; Iakovou et al., 2014; Voyer et al., 2018)
	Local Procurement	(Buddas, 2014; Kunz & Gold, 2017; Besiou et al., 2014)
Securing Stakeholders (obtaining stakeholders prior to disaster)	Communication & Trust	(Buddas, 2014; Kunz & Gold, 2017; Besiou et al., 2014)
	Disaster Examples	(Banomyong & Julagasigorn, 2017; Xu, 2018)
	Government & Political	(Buddas, 2014; Whybark, 2015)
DURING A DISASTER		
Enhancing Delivery (SCM focus on delivery during disasters)	Central Management	(Sauer, Kraft, & Rennhak, 2016; Brengarth & Mujkic, 2016)
	Delivery Time	(Voyer et al., 2018; Berenguer, 2016)
	Delivery Accuracy	(Anjomshoae, Hassan, Kunz, Wong, & de Leeuw, 2017)
Discussing Locations (discussion of examples & results)	Refers to Disasters Real-Time	(Urrea & Pedraza-Martinez, 2019; Banomyong & Julagasigorn, 2017; Lindner, Sackmann, & Betke, 2019; Tapia et al., 2015)
	Frequency & Unpredictability	(Voyer et al., 2018; Whybark, 2015; Lindner et al., 2019)
Utilizing Stakeholders (types of stakeholders involved during disasters)	Donor Involvement	(Ülkü, Bell, & Wilson, 2015)
	Government-Centric Approach	(Franklin & Todt, 2014)

POST-DISASTER		
Supply Chain Management (Process of SCM following a disaster)	Boundaries Between Stages	(Dubey & Gunasekaran, 2016; Kunz & Gold, 2017; Starr & Van Wassenhove, 2014; Oloruntoba & Kovács, 2015)
	Flexibility in SCM	(Dubey & Gunasekaran, 2016; Kabra & Ramesh, 2016)
	Advanced Planning	(Haavisto & Kovács, 2014)
	Operational Needs	(Voyer et al., 2018; Bhattacharya et al., 2014)
	Post-Disaster Costs	(Eckhardt, Leiras, & Thomé, 2019)
Evaluation & Rehabilitation (How to evaluate efforts to promote stronger rehabilitation)	Proactive Measures	(Kunz & Gold, 2017; Banomyong & Julagasigorn, 2017; Starr & Van Wassenhove, 2014; Oloruntoba & Kovács, 2015)
	Reactive Measures	(Dubey & Gunasekaran, 2016)

Pre-Disaster

Despite the fact that humanitarian disasters are increasing at an astronomical rate, as indicated in the literature, there is no efficient, structured, or standard protocol adopted by all nonprofit organizations to deploy aid as soon as a disaster occurs (Ma, Tianjin, & Wei, 2018). Arguably, one of the best ways to ensure efficiency in advance of a disaster is resource mapping. According to Bhattacharya et al. (2014), during the pre-disaster stage, it is critical to determine the locations of facilities and the number of items to keep at each location. In addition, Bhattacharya et al. (2014) argue that in order to be efficient and effective during the onset of a disaster, nonprofit and humanitarian organizations alike need early on to determine their resources, which can involve transportation equipment, food, clothing, etc. Likewise, Dubey and Gunasekaran (2016) note that organizations should map their resources early because during a disaster it can be difficult to obtain and deploy resources such as planes and automobiles. The key difference between the two sources is that Dubey and Gunasekaran (2016) believe resources must be adapted to meet the conditions after a disaster has happened. Scarpin and Silva (2014) agree that it is essential to establish distribution centers and resources early. On the other hand, Scarpin and Silva (2014) argue that it is sometimes advantageous to wait until a disaster occurs to customize the humanitarian chain and tailor the response to the needs of the stakeholders. It is critical to note that while a location might be picked out in advance, an environmental disaster may nullify the potential location. We would suggest having a contingency plan in place.

At the onset of a humanitarian disaster, it is critical to reduce lead time to ensure that aid is made available in the most efficient manner. Iakovou et al. (2014) argue that one of the main objectives in providing aid is to reduce the time it takes to respond to the more affected areas, including bringing in supplies to relieve those in need. Buddas (2014) agrees with Iakovou et al. (2014) that cutting lead time will lead to more efficiency in the pre-disaster stage. Iakovou et al. (2014) also recognize the need to differentiate among the types of humanitarian disasters and to employ a supply chain (SC) that is structured to support the needs specific to the type of disaster. In addition, Besiou et al. (2014) studied local procurement, specifically for vehicle supply chains (VSCs), focusing on lead times based on centralized, decentralized, and hybrid models, noting that "the decentralized VSC has the highest service level because of the shortest purchasing lead time resulting from procuring vehicles locally and regionally." It is critical to take into account all factors that can reduce the lead time to ensure the quickest response.

Volunteer stakeholders are critical to the success of the pre-disaster phase and can be trained to assist when disaster strikes. Banomyong and Julagasigorn (2017) discuss the importance of agencies and leaders in building trust with community members during the pre-disaster phase. However, Franklin and Todt

(2014) disagree, arguing that emergency relief efforts have not been that beneficial, due to a lack of communication between nonprofits and points of contact. Franklin and Todt (2014) add that rarely are volunteer stakeholders and countries focused on emergency planning; however, they do provide resource planning, which helps secure resources for some of the more susceptible constituents during a disaster. Banomyong and Julagasigorn (2017) describe how a successful company, P&G, one month before a flood in Thailand, leveraged community volunteers by training them and how to monitor and report on demand; thousands of packets were also kept in storage in the houses of community leaders (Whybark, 2015).

An area of improvement seen throughout the literature is the cultivation of relationships before disaster strikes. Buddas (2014) agrees that supplier relations could produce better outcomes by attending to preparations that will make more supplies available when a disaster strikes. We suggest that future work be done to strengthen supplier relations. This could include optimum partnerships between nonprofits and other organizations and stakeholders, and relations that focus on resource and supply planning.

During a Disaster

Several authors focus on delivery time and speed as the most critical components of disaster response. According to Sauer et al. (2016), the central management tool for an effective response in this respect is logistical operations. Berenguer (2016) adds that the humanitarian supply chain is greatly influenced and enhanced by delivery times during emergency relief. Anjomshoae (2017) also states that the accuracy of delivery is essential to resource mobilization.

There are many studies of humanitarian disasters that focus primarily on what actions occur, or should occur, shortly after a disaster strikes. Whybark (2015) explains, "There are many areas where disasters occur unpredictably but frequently. Earthquakes in the Andes of South America, famine in the Sahel of Africa, Cyclones in south east Asia, hurricanes in the southeast United states and so forth" (Whybark, 2015). In addition, Whybark (2015) observes that it is difficult to monitor a disaster once it strikes and to modify a response plan to engage more responders. This has been explored in the case of flooding in Thailand as well; Proctor and Gamble (P&G) was able to provide water purification in advance, and once the disaster struck, citizens knew how to act to provide their community with filtered drinking water (Banomyong & Julagasigorn, 2017). Similarly, Urrea and Pedraza-Martinez (2019) state that "programs implemented during the response phase aim to alleviate the most urgent needs of the population. A practical example of the work HOs perform during the response phase after a natural disaster is of Haiti after Hurricane Matthew struck the country on October 3, 2016, affecting over two million people." With all of these situations' having unique circumstances, depending on the humanitarian disaster, region, and countries affected, further research could be conducted to analyze natural humanitarian disasters and responses, and to identify correlations and best practices.

Post-Disaster

The transition from active disaster to post-disaster is not always clear, as there are many moving parts, organizations involved, and commonalities between the two stages. Kunz and Gold (2017) add that not only are the boundaries unclear, but also sometimes the two phases overlap, stating, "At the end of the disaster management cycle, the rehabilitation phase then fades to development aid, which aims at building local capacity in vulnerable areas." In addition, Kabra and Ramesh (2016) emphasize the importance of developing efficient supply chain designs that allow stakeholders to be as adaptable as possible in the wake of a disaster. As events progress, it is imperative that supply chain management systems be re-evaluated to maintain efficiency and keep priorities in focus. "The humanitarian supply chain is a complex network of NGOs, government, military, police, action aids, logistics service providers with zero tolerance attitude to provide relief to the victims of a catastrophic event or disaster in forms of providing eating materials, medicines, medical support and to ensure quick recovery or increase supply" (Dubey & Gunasekaran, 2016). Haavisto and Kovacs (2014) characterize the humanitarian supply chain in a manner similar to that of Dubey and Gunasekaran (2016), stating, "Humanitarian supply chain management encompasses the planning and engagement of all activities involved in sourcing and procurement,

conversion, and all logistic management activities." As in the unclear transition from active disaster to post-disaster, costs related to each stage can also be difficult to differentiate. Eckhardt et al. (2019) state, "It is not easy to distinguish the actions and economic costs related to the disaster response and recovery (when response ends, and recovery starts)." Bhattacharya (2014), on the other hand, believes that it is easier to distinguish them if you recognize that "post-disaster decisions are mostly operational decisions about shipment/delivery of supplies to the beneficiaries." While much is written on what actually happens during the post-disaster stage, further research could be conducted on what distinguishes this stage and on developing a model for future nonprofits to use to better analyze the differences between the stages.

The post-disaster stage, while vague and difficult to differentiate from the active disaster stage, can clearly change to more of an evaluation and rehabilitation phase as work on the ground nears completion. "The dividing line between disasters and development becomes thinner since disaster relief constitutes an opportunity to start work on development issues that will follow the end of the disaster relief phase" (Starr & Van Wassenhove, 2014). Oloruntoba and Kovacs (2015) suggest that the phase change could be marked by changes in modes of aid, for example, "from air freight (in emergencies) to road freight, and later on, sea-borne transportation as the need for speedy and urgent delivery ebbs, and as the supply chain re-configures from 'push' to 'pull' as the nature of demand and demand information becomes clearer and better known."

While Oloruntoba and Kovacs (2015) promote proactive measures, Dubey and Gunasekaran (2016) argue that the "logistics involved in disaster response are reactive and are set up temporarily with specific functional elements in mind. This still requires advanced planning, and thus HSC planning has three main components: preparedness, response and collaboration" (Dubey & Gunasekaran, 2016). Banomyong and Julagasigorn (2017) propose creating a plan much like the one Oloruntoba and Kovacs (2015) suggest and utilizing the preparedness, response, and collaboration scheme outlined by Dubey and Gunasekaran (2016), stating that responsiveness can be effective and efficient if firms "collaborate with relief agencies and the community leaders to recover the losses, ensure the sufficient supplies, follow-up and evaluate the execution, revise and improve the relief plans and policies" (Whybark, 2015).

The evaluation and assessment of work completed in each phase can be enhanced if future work can create an effective evaluation tool.

COMMUNICATION AND TECHNOLOGY

This section focuses on the impact of communication and technology throughout the stages of a humanitarian disaster. The selected literature focuses on three main areas: (1) the media and the role played by the media, in particular, their impact on donations, (2) technology and its evolution during the course of a disaster, and (3) communication techniques.

TABLE 2
COMMUNICATION AND TECHNOLOGY

MEDIA		
Leveraging Coverage (media coverage impact and awareness creation)	Budget	(Eftekhar, Li, Van Wassenhove, & Webster, 2017)
	Positive Impact of Coverage	(Scarpin & Silva, 2014; Dubey & Gunasekaran, 2016; Besiou et al., 2014; Eftekhar et al., 2017; Bealt et al., 2016; Toyasaki & Wakolbinger, 2014)
	Negative Impact of Coverage	(Dubey & Gunasekaran, 2016; Whybark, 2015; Haavisto & Goentzel, 2015)
Impacting Donations (the media's impact on donations)	To Increase Donations	(Scarpin & Silva, 2014; Dubey & Gunasekaran, 2016; Urrea & Pedraza-Martinez, 2019; Whybark, 2015; Eckhardt et al., 2019; Eftekhar et al., 2017; Toyasaki & Wakolbinger, 2014)
	News Channels to Reach Prospective Constituents	(Urrea & Pedraza-Martinez, 2019; Bealt et al., 2016)
	Negative Media Coverage Impacting Donations	(Whybark, 2015; Eftekhar et al., 2017; Toyasaki & Wakolbinger, 2014)
Utilizing Social Media & Crowdfunding (benefits & tools for using social media during a humanitarian disaster)	Cost-Effectiveness	(Yee & Yazdanifard, 2015; Aboramadan, 2018)
	Online Giving Benefits	(Belleflamme et al., 2014; Mittelman & Dow, 2018)
	Examples of Social Media Application	(Banomyong & Julagasigorn, 2017; Akhgar et al., 2013; Jayaram & Gidaballi, 2016; Mukkamala & Alivelu, 2018; Burns, 2015)
	Targeted Approach & Data	(Luna & Pennock, 2018; Urrea & Pedraza-Martinez, 2019)
	Crowdfunding	(Urrea & Pedraza-Martinez, 2019; Belleflamme et al., 2014; Kumar, 2020)
TECHNOLOGICAL IMPACT		
Information Flow (the flow of information throughout the stages of a humanitarian disaster)	Investment	(Abidi, de Leeuw, & Klumpp, 2014)
	Efficient Communication Networks	(Altay & Pal, 2014; Villa et al., 2017; Lindner et al., 2019; Tapia et al., 2015; Brengarth & Mujkic, 2016)
	Proactive Information Flow	(Voyer et al., 2018; Banomyong & Julagasigorn, 2017)
	Stakeholders/Decision Makers	(Villa et al., 2017; Peterken & Bandara, 2018; Day, 2014)

Employing Information Systems (types, uses, and protocols)	Software Systems	(Buddas, 2014; Kabra & Ramesh, 2016; Belleflamme et al., 2014; Peterken & Bandara, 2018; Gavidia, 2017; Goldschmidt & Kumar, 2016; Tapia et al., 2015)
	Web-Based Technology	(Goldschmidt & Kumar, 2016; Brengarth & Mujkic, 2016)
	Customization & Evaluation	(Gavidia, 2017; Peterken & Bandara, 2018; Merminod, Nollet, & Pache, 2014; Banomyong et al., 2019)
	Efficiency	(Buddas, 2014)
Investing in Technology (throughout a humanitarian disaster)	Level of Investment & Pricing	(Peterken & Bandara, 2018; Belleflamme et al., 2014)
COMMUNICATION OF		
Planning for Sustainability (utilizing communication to enhance sustainability)	Increase in Natural Disasters	(Whybark, 2015)
	Strategic Planning & Partnerships	(Buddas, 2014; Kunz & Gold, 2017)
Collaborating with Stakeholders (the importance of collaborating by communicating)	Coordination Challenges	(Dubey & Gunasekaran, 2016; Haavisto & Kovács, 2014; Gavidia, 2017; Goldschmidt & Kumar, 2016; D'Haene et al., 2015; Ergun et al., 2014; Izumi & Shaw, 2015; Selviaridis & Wynstra, 2015; Schaltegger & Burritt, 2014; Brengarth & Mujkic, 2016)
	Positives of Collaboration	(Bealt et al., 2016; Ergun et al., 2014)
	Difficulty of Standardization	(Ergun et al., 2014)
	Costs	(Eftekhar et al., 2017; Goldschmidt & Kumar, 2016)
	Stakeholders	(Goldschmidt & Kumar, 2016; Leiras et al., 2014)
	Internal Communication	(Kunz & Gold, 2017; Kabra & Ramesh, 2016; Ataseven et al., 2018; Gupta et al., 2016; Muggy & Stamm, 2014; Polater, 2018; Santarelli et al., 2015)
	External Communication	(Franklin & Todt, 2014; Buddas, 2014; Villa et al., 2017; Peterken & Bandara, 2018; Brengarth & Mujkic, 2016)
	Transparency & Strategies	(Franklin & Todt, 2014; Urrea & Pedraza-Martinez, 2019; Villa et al., 2017)
	Examples during Disasters	(Franklin & Todt, 2014; Ataseven et al., 2018)

Media

Many of the authors in the sample discuss how media coverage can positively or negatively impact humanitarian organizations, specifically nonprofits, as a result of their coverage of a humanitarian disaster, or lack thereof. Whybark (2015) highlights various circumstances where the media has negatively affected humanitarian organizations during a disaster. One example is when warm clothing or toys are sent to a disaster area. These items are often well-intentioned; however, they may be unnecessary, and it may require capital and resources to ship, disperse, and clean them up. Anjomshoae (2017) offers a similar example, observing that increased media attention can elicit unsolicited donations, such as wool clothes in the tropics, which can result in negative media exposure for nonprofit organizations. Haavisto and Goentzel (2015) argue that it is difficult to measure supply chain performance, due in part, to potential negative media exposure.

Many authors also discuss the positives of media exposure during a humanitarian crisis. Muggy and Stamm (2014) point out the benefits of media exposure and the correlation between coverage and competition between nonprofit organizations. Nonprofits will often compete for media exposure during a crisis to gain additional donors and support (Muggy & Stamm, 2014). The majority of the literature concurs that the most positive result of media exposure for nonprofit organizations is that it directly correlates to increased donations. As discussed by Eftekhar et al. (2017) and Toyasaki and Wakolbinger (2014), humanitarian and nonprofit organizations compete for media coverage of a disaster because it enhances funding. Eftekhar et al. (2017) investigated the relationship between media exposure and donations and discovered an important donation-source-dependent time effect: "Specifically, we show that donations from the general public are affected by the immediate media exposure whereas governmental donations have a lagged dependency on media exposure" (Eftekhar et al., 2017). In addition, Scarpin and Silva (2014) not only agree with all the above-mentioned authors, but add that during devastation and tragedy, media exposure can increase donations even further as appeals to prospective donors grow stronger. Schiffling and Piecyk (2014) support these findings and believe that donors gauge performance through media coverage and reports, which may or may not feature a specific nonprofit organization, and will then base their "donor behavior" on the media coverage and information. Eftekhar et al. (2017) echo the ideas of Schiffling and Piecyk (2014), asserting that media coverage enhances individual donors' need to give; however, donors do not always follow up on a nonprofit's operational performance after an event.

We propose that future research be done to measure the average percentage increase based on minutes of media coverage during a humanitarian disaster. This could be further broken down by region, country, and the number of miles between the donor and the disaster (namely, are donors across the world likely to give to a humanitarian disaster that is not affecting them?).

Conversely, others observe the negative effects of media coverage on philanthropic contributions to nonprofit organizations during humanitarian disasters. Whybark (2015) highlights the facts that donations typically follow the media cycle and that it is difficult to gauge cash flow, because once the media stop covering the disaster, donation consistency stops. Eftekhar et al. (2017) identified a one-year lag and observed that current-year performance data is not always available while allocating funding, so agencies often utilize previous-year data. In addition, Eftekhar et al. (2017) assert that there is a decision cycle time for donations, because institutional sources show a lag between the time when decisions are made and when funds are received. The earmarking of donations will be discussed later under the finance and philanthropy section; however, Toyasaki and Wakolbinger (2014) argue that nonprofits' not allowing for the earmarking of donations during disasters with high media attention may lead to a decrease in donation amounts. Amounts would increase if earmarking were not permitted, because donors often feel more confident in giving to an organization that allows donors to contribute to a specific fund or purpose. Future research could be conducted outlining the negative effects of media, in particular on donations and contributions. This might be a good topic for a literature review, to see what information is already available.

Social media plays a significant role on the part of nonprofits during a humanitarian disaster, especially more recently with the increase in social media applications and usage (Akhgar et al., 2013).

According to Luna and Pennock (2018), social media provides a platform with supporting data that can be collected and analyzed to improve communication during a disaster. Due to all of the positive impacts of social media, primarily in regard to communication, Luna and Pennock (2018) argue that it should be adapted and deployed for emergency management. In addition, Yoo et al. (2016) identified an increase in the use of social media pertaining to disaster and relief operations and offered the suggestion that this, too, would increase philanthropic support. Yee and Yazdanifard (2015) and Aboramadan (2018) argue that the use of social media will inevitable lower nonprofit costs because it allows for more cost-effective advertising. Crowdfunding will be examined below; however, Urrea and Pedraza-Martinez (2019) examine the relatively new trend of soliciting donations through social media. In the literature, social media, as it pertains to influencing donations throughout a humanitarian disaster, and nonprofits' use of social media under these circumstances, have been explored by a small number of authors. We suggest that future research be done, specifically studies on the impact of social media on philanthropy during disasters, on how nonprofits are leveraging this new tool, and on which social media platforms (i.e., Twitter, Facebook, Instagram, etc.) are most beneficial for nonprofit organizations during humanitarian disasters.

In addition to social media, crowdfunding platforms have greatly enhanced nonprofit efforts. Belleflamme et al. (2014) offer the following definition: "Crowdfunding involves an open call, mostly through the Internet, for the provision of financial resources either in form of donation or in exchange for the future product or some form of reward to support initiatives for specific purposes." Crowdfunding contributions are usually small and can be used by both individuals and organizations (Belleflamme et al., 2014). Crowdfunding allows humanitarian organizations to target a specific audience and enables the nonprofit to provide ample information about its operations and what the donations will be used for (Urrea & Pedraza-Martinez, 2019). This is one of the newest trends in fundraising. As Urrea and Pedraza-Martinez (2019) suggest, future research could explore how humanitarian organizations can make the best use of these new fundraising channels.

Technological Impact

The flow of information between nonprofits and their stakeholders is critical throughout the stages of a humanitarian disaster. Abidi et al. (2014) suggest that improving the information flow of humanitarian organizations is critical to increasing performance management. According to Banomyong and Julagasigorn (2017), humanitarian supply chains could be more proactive in terms of physical and information flows. In addition, Villa et al. (2017) state, "There is a positive association between the gathering of information from an organization's different audiences and the establishment of improved understanding among different (internal and external) parties."

Similarly, several authors have examined correlations between the transparency of an organization and its program performance (Urrea & Pedraza-Martinez, 2019; Altay & Pal, 2014; Villa et al., 2017)). While it is evident that enhanced transparency and communication in nonprofits help with focused information flow, Abidi et al. (2014) question how much of an investment should be made by employees in collecting data during a disaster, when their resources could be utilized to enhance information flow in different capacities. Day (2014) concurs with Abidi et al. (2014), asserting that disaster relief supply chains are built person by person, with each stakeholder having important pieces to share with the others, and these can include suppliers with distribution, etc. In order to establish an optimum information flow during a humanitarian disaster, communication plans need to be established and constantly reviewed and updated to ensure efficiency and accuracy (Day, 2014). Future research could be conducted to produce a scalable communication model for nonprofits and humanitarian organizations alike. The focus of the research could be on utilizing past examples in the literature to create a sustainable model that indicates which stakeholders should be responsible for specific areas of communication in the disaster relief supply chain.

Information systems are utilized by nearly every nonprofit, as it is necessary to efficiently maintain accurate data and information; however, it has been found that there is no single, streamlined information system that meets the needs of every nonprofit in a humanitarian disaster. Goldschmidt and Kumar (2016)

state, "Most organizations use computers for general applications, such as accounting, e-mail, and video conferencing. Recently, a few organizations, however, appear to utilize the web-based application to coordinate the humanitarian supply chain networks" (Goldschmidt & Kumar, 2016). According to Goldschmidt and Kumar (2016), web-based supply chain networks and IT infrastructure are lacking in developing countries and in locations where humanitarian disasters are taking place, so while nonprofits and companies may have the information in a database, it may not be accessible or updatable, depending on conditions at the site of the disaster. According to Peterken and Bandara (2018), individual members need to have metrics in place and processes that ensure information systems are accurately updated and utilized to improve the efficiency of the organization. Peterken and Bandara (2018) also state that there are severe consequences for an organization when the environment of a process-focused system fails. Most of the literature that addresses the use of information systems to their full capability emphasizes the importance of routine updating. Buddas (2014) adds that operational performance can be enhanced by the more efficient management of IT within an organization.

Our findings show that future work could explore the development of a single information system that would help nonprofit organizations during a humanitarian disaster. Further research could push for applications that can connect communication channels with stakeholders to facilitate disaster relief.

Communication of Information in the Context of Humanitarian Disasters

Collaboration and coordination are two of the most-cited components of the communication and technology used during a humanitarian disaster. Leiras et al. (2014) acknowledge that coordination takes place among many stakeholders, and that it is most effective if it includes all possible stakeholders. Goldschmidt and Kumar (2016), likewise acknowledge that there is a variety of stakeholders, but take it a step further, highlighting that often these stakeholders are geographically distributed. To coordinate efforts, Goldschmidt and Kumar (2016) suggest employing a web-based information portal that can centralize information while enabling various actors to use their own applications; this could reduce costs and errors and improve the quality of operations (Merminod et al., 2014).

A study conducted by Eftekhar et al. (2017), which analyzed media exposure and operational performance, found that "while coordination may undermine an HO's public exposure, it can boost operational performance and reduce costs, indirectly stepping up HOs' capacity to cover a larger population of beneficiaries." There are several benefits of enhancing coordination between nonprofits and similar organizations; however, Ergun et al. (2014) argue that it is difficult to promote coordination during a disaster because each organization involved has its own unique systems, system management, and regulations, based on its mission and contribution. The difficulty lies in the differences among the organizations and in their ability to streamline their services while maintaining an individualized approach and mission.

Lastly, and arguably most importantly, communication plays a critical role in the success of nonprofits during humanitarian disasters. In the reviewed literature, a common theme arose in regard to communication; essentially, it is difficult to establish a comprehensive communication plan suitable for a humanitarian disaster. According to Whybark (2015), once a disaster strikes, the area is often chaotic, and communication, cooperation, and collaboration among responders and organizations first on the scene are difficult. In addition, Franklin and Todt (2014) indicate that it is difficult for local governments to communicate information to the public about resources and needs, which results in unnecessary donations and a chaotic disaster scene. Franklin and Todt (2014) argue, "Without a functioning information management system for the acquisition, storage, and distribution of recovery resources, communities will struggle to ensure the availability and timely delivery of critical goods and services after a disaster." Peterken and Bandara (2018) add that it is often difficult for humanitarian organizations to communicate effectively with staff. For example, they explain that "in the Red Cross there are 4 official languages (English, French, Spanish, and Arabic) and two unofficial languages (Russian and Mandarin)". Translating even basic business process documents written in English is a challenge. Translators and interpreters find it very challenging to represent terms such as "business process management" or "process control" in another language when they do not even understand it in English (Peterken &

Bandara, 2018). Similarly, Buddas (2014) found "the empirical data suggests that communication needs to be improved jointly within the work team and the FRC, on aspects such as work scheduling and appropriate measures for evaluating work performance."

Future research could examine the communication plans in place for the stages of disaster relief and recovery to better understand what unfolds on the ground with regard to nonprofits during a humanitarian crisis. A model could be created and implemented that would better serve all stakeholders and would lead to a transparent, proactive, and informative communication plan, which could be individualized based on the type, magnitude, and location of the disaster. One example could incorporate the research of Ataseven et al. (2018) on food banks, which provides insight into their communication with stakeholders. "Since communication is essential for gaining and maintaining support from suppliers, food banks publish reports, newsletters, and statements regarding their operations to inform the donors, convey information, establish trust, and show how the expectations as to the mission of the food bank are met" (Ataseven et al., 2018). A comprehensive, flexible, and adaptable communication plan would immeasurably enhance the efforts of nonprofit and humanitarian organizations.

FINANCE AND PHILANTROPHY

In this section, the relevant literature is classified based on finance and philanthropy. The topics can be grouped into three main categories, namely, fundraising, monetary flow, and types of donations.

TABLE 3
FINANCE AND PHILANTROPHY

FUNDRAISING		
Philanthropy through SCM (various stages of SCM used during fundraising)	Compares donors to customers	(Buddas, 2014)
	Competitiveness	(Toyasaki & Wakolbinger, 2014)
	Differences	(Urrea & Pedraza-Martinez, 2019; Davis et al., 2016)
	Responsiveness	(Dubey, Samar Ali, Aital, & Venkatesh, 2014)
Organizing Activity Cycles (annual cycle to ensure fundraising success)	Campaigns	(Aboramadan, 2018)
	Logistics	(Voyer et al., 2018; Abidi et al., 2014)
	Longevity	(Haavisto & Goentzel, 2015)
	Evaluation	(Peterken & Bandara, 2018; Santarelli et al., 2015)
Exploiting Data (using data to drive results)	Metrics	(Maghsoudi & Pazirandeh, 2016)
	Influence	(Eftekhar et al., 2017; Prasad, Zakaria, & Altay, 2018)
Motivating Factors (what motivates donors to give?)	Relationships	(Ülkü et al., 2015; Jeble, Kumari, Venkatesh, & Singh, 2019)
	Politics	(Ülkü et al., 2015)
	Private Donors	(Urrea & Pedraza-Martinez, 2019; Ülkü et al., 2015)

MONETARY FLOW		
Planning Monetary Flow (planning philanthropic contributions)	Unpredictable Donor Funding	(Iakovou et al., 2014)
	Planning	(Iakovou et al., 2014; Day, 2014; Burkart, Besiou, & Wakolbinger, 2016; Aflaki & Pedraza-Martinez, 2016)
Donors as Stakeholders (focus on the donor as a primary stakeholder)	Donor-Centric/Stakeholders	(Oloruntoba & Kovács, 2015); Schiffling & Piecyk, 2014; Prasad et al., 2018; Aflaki & Pedraza-Martinez, 2016)
	Government	(Mittelman & Dow, 2018)
	Individual Donors	(Mittelman & Dow, 2018)
	Transparency	(Urrea & Pedraza-Martinez, 2019; Haavisto & Goentzel, 2015; Abidi et al., 2014; Prasad et al., 2018; Fathalikhani et al., 2018)
TYPES		
In-Kind Donations	Definition	(Urrea & Pedraza-Martinez, 2019; Banomyong & Julagasigorn, 2017)
	Financial Performance	(Banomyong & Julagasigorn, 2017; Besiou & Van Wassenhove, 2015)
	Challenges	(Scarpin & Silva, 2014; Ülkü et al., 2015; Besiou & Van Wassenhove, 2015; Peretti, Tatham, Wu, & Sgarbossa, 2015)
	Distribution	(Scarpin & Silva, 2014; Maghsoudi & Pazirandeh, 2016; Besiou & Van Wassenhove, 2015; Balcik & Ak, 2014)
	Effectiveness	(Urrea & Pedraza-Martinez, 2019; Ülkü et al., 2015)
Restricted / Earmarked Funds (only used for designated purpose)	Definition	(Besiou et al., 2014; Bhattacharya et al., 2014; Toyasaki & Wakolbinger, 2014; Burkart et al., 2016; Fontainha, Melo, & Leiras, 2016)
	Negative Aspects	(Besiou et al., 2014; Bhattacharya et al., 2014; Aflaki & Pedraza-Martinez, 2016)
	Retention	(Scarpin & Silva, 2014)
	Stakeholders & Social	(Besiou et al., 2014; Burkart et al., 2016)
Unrestricted/ Cash Donations (used at the discretion of the nonprofit)	Definition	(Urrea & Pedraza-Martinez, 2019; Toyasaki & Wakolbinger, 2014; Aflaki & Pedraza-Martinez, 2016)
	Efficiency	(Urrea & Pedraza-Martinez, 2019; Fathalikhani et al., 2018)
	Trust	(Ülkü et al., 2015; Aflaki & Pedraza-Martinez, 2016)

Fundraising

Supply chain management and fundraising are interconnected, and they affect the key stakeholders of the nonprofits and communities which they serve. According to Buddas (2014), the expectation of donors resembles that of customers in a commercial supply chain, namely, "an efficient and effective supply chain that delivers maximum output for the customers' money."

Dubey et al. (2014) suggest that during a humanitarian disaster there are two important characteristics of supply chains for nonprofits – responsiveness and resilience – especially within hospitals and medical teams. According to Toyasaki and Wakolbinger (2014) the fundraising environment is extremely competitive, which also affects the amounts of donations and their impact. Moreover, the amounts of donations correlate with the speed at which supply chain management assistance can be deployed during a disaster (Toyasaki & Wakolbinger, 2014).

Conversely, Davis et al. (2016) argue that nonprofit environments for securing philanthropic support differ vastly from the commercial environments of supply chains, due to their speed and their ability to generate profits. Davis et al. (2016) refer to a food bank supply chain whose main goal was not solely to maximize profits, but to minimize waste as well. There is still a component of mitigation in humanitarian supply chains. As Urrea and Pedraza-Martinez (2019) state, "In the mitigation phase, Hos attempt to increase community resilience by looking for structural ways to reduce risk." Urrea and Pedraza-Martinez (2019) suggest that further research be conducted on disaster mitigation. We also suggest that further research be conducted on the differences between commercial and humanitarian supply chain networks and the key stakeholders involved in each.

Many scholars distinguish between inefficient and efficient ways for nonprofits' supply chain networks to operate during humanitarian disasters. Banomyong and Julagasigorn (2017) acknowledge several authors who touch on the premise that most philanthropic activities are too lacking in appropriate coordination, implementation, and adequate maintenance in the long term to be truly efficient. Ulku et al. (2015) add, "Unfortunately, aftershock disasters or 'disasters within disasters' can occur not only due to the inefficiencies in logistics coordination, but also due to the receipt of unsolicited or inappropriate donations that may hamper relief operations." If one inefficiency occurs within a supply chain network, it can negatively affect the process for years to come. In contrast, Dubey and Gunasekaran (2016) state that "leading logistics service providers, such as DHL, FedEx, TNT, and UPS, have demonstrated important synergies with their humanitarian counterparts such as NGOs to improve the speed and efficiency of relief work." In addition, Banomyong and Julagasigorn (2017) argue that firms can increase efficiency by helping relief agencies decrease logistics costs, enabling victims and others affected to benefit, while the firm reaps the benefits of an increase in positive reputation. We suggest that further research be done on a model to streamline the operations of nonprofit organizations and make them more efficient, and to identify the causes of inefficiencies.

Organizations' activity cycles are influenced by the monetary flow cycles. According to Aboramadan (2018), nonprofit organizations benefit from preparing fundraising campaigns to ensure financial sustainability. Fundraising campaigns are designed to meet organizational objectives by appealing to the public for a specific cause, which can be capital or comprehensive. Philanthropic activity cycles typically establish goals and are analyzed based on the annual cycle of a fiscal year. Abidi et al. (2014) assert that only by effectively managing logistics can organizations prove to their stakeholders, such as donors and beneficiaries, that they are performing well. Performance measures need to be established at the beginning of the fiscal year in order to create a sense of urgency and drive stronger appeals to prospective donors. For instance, Haavisto and Goentzel (2015) explain that before organizations like the US Agency for International Development (USAID) and the European Community Humanitarian Office give aid, they consider the longevity of its effects and monitor and evaluate a program's processes.

Haavisto and Goentzel (2015) continue by claiming that nonprofit organizations must be both transparent and efficient in order to gain and retain donors. The building of trust must be part of an organization's activity cycle, and touch points need to happen frequently throughout the year with current, past, and future donors alike. We propose that future work examine nonprofit activity cycles and analyze the impact of touch points on building trust. This can include solicitations through appeals, cultivation

pieces such as newsletters and reports, social media contacts, and especially, stewardship pieces. A model could be created to explore the most effective communication and fundraising plan that would be scalable according to the size and mission of a nonprofit organization.

Today, more so than ever, data is driving organizational success. Numbers and available information are being analyzed to create optimal environments, which lead to more productive companies and fewer errors in the long term. According to Maghsoudi and Pazirandeh (2016), resource metrics are used by organizations to measure efficiency and establish whether an organization is using resources wisely. In addition, Eftekhar et al. (2017) write that "governmental and non-governmental entities who fund Hos maintain data on Hos' operational performance and use the data to determine future donations. Therefore, institutional donations are influenced by Hos' operational performance" (Eftekhar et al., 2017). As Eftekhar et al. (2017) argue, data is critical to the diversification of funding for nonprofit organizations. However, if an organization makes its numbers and data appear to be better than they actually are by double counting, including pledges and so forth, it undermines their autonomy and fundraising best practices. Prasad et al. (2018) add that there is great value in establishing, cultivating, and sustaining a base of donors for the sustainability of a nonprofit. Prasad et al.'s analysis of empirical results paved the way for future decisions and will help the organization become more efficient and effective in its use of funding as it moves forward (2018). We believe this is one of the major changes that will be occurring within nonprofit organizations over the next ten years. Leadership will be looking more closely at the data to make informed decisions that can lead to more efficient operations. This will inevitably be an area for future work to consider.

Monetary Flow

Monetary flow is a critical component of planning for nonprofit organizations. However, in their examination of global health programs, Iakovou et al. (2014) comment that donor funding is inherently uncertain; in the planning stages, the amounts and timing of funding can be unpredictable.

Donations tend to be sporadic, but so do humanitarian disasters, making the planning of monetary flow difficult for nonprofit organizations. Day (2014) compares monetary flows to raw material resource flows: "Instead of providing compensation for value creation, disaster relief monetary flows can function as a raw material resource flow in the sense that money becomes an input that is transformed into goods and services for consumption by those who are not in a position to pay." In addition, Day (2014) notes that nonprofits look to fill needs and maintain the integrity of their donor's interests. Monetary flow is also characterized in terms of funding systems, which Burkart et al. (2016) describe as "organizational structures and activities used to plan, implement and control funding supply chains from raising resources (financial funds, physical goods, and services) from donors until the fulfillment of urgent needs using these resources." Future research could include case studies analyzing the monetary flow in specific types of nonprofit organizations, and it could be examined further by analyzing it from the pre- to the post-disaster phases of humanitarian crises, to establish more efficient flows of donations and resources.

Types of Donations

There are three types of donations that are critical to nonprofits in humanitarian disasters: in-kind, restricted (earmarked), and unrestricted (cash) donations. In-kind donations are tangible items; restricted, or earmarked, donations are to be used for a specific purpose; and cash donations may be used at the recipient's discretion.

Urrea and Pedraza-Martinez (2019) reviewed several authors to construct a well-rounded definition of in-kind donations; according to them, in-kind donations are tangible materials, such as relief items like food, water, blankets, blood, and so forth. Banomyong and Julagasigorn (2017) argue that in-kind donations can improve corporate financial performance, due to the awareness that is created in internal and external stakeholders. In addition, they hold "that a firm's in-kind donation in disaster relief activities could produce reputations and competitive advantage through stakeholders' attention." Besiou and Van Wassenhove (2015) echo their view, observing that local stakeholders are often the donors and/or beneficiaries of these programs, which further promotes corporate financial performance and reputation.

According to Ulku et al. (2015), the motivations of donors who contribute in-kind donation vary; they claim that donors mostly give in-kind donations because they envision disaster victims using the items they contribute. To provide additional context for understanding in-kind donations, they note that donations are used for specific purposes; donors feel more confident about their decision to donate because they know the items will be used for a specific purpose.

In-kind donations are the most discussed in the selected literature; however, occasionally, in-kind donations are not effective. Ulku et al. (2015) share an example of non-effective in-kind donations: "Following the Haiti earthquake in January of 2010, media sources reported on the flood of unsolicited and useless donations entering the country, including high-heeled shoes, winter clothing, and expired medication." They go on to report that while the donations are not always useful, donors are trying to be helpful. Ulku et al. (2015) also discuss coordinated help organizations (CHOs), which work to educate donors, provide additional transparency, and establish trust. Lastly, they write that in-kind donations are often inappropriate or of poor quality, which may further impair the regret cost. Not only may in-kind donations not be helpful, Urrea and Pedraza-Martinez (2019) explain that they can also create logistical confusion and managerial hardships, if they are not needed during a particular humanitarian disaster. Peretti et al. (2015) explain that there is "a broad spectrum of material that is procured, transported and distributed by the humanitarian logistician." Some of this material may be useful elsewhere but distributing it can be challenging. The difficulties involve managing the donations, matching them with nonprofits working a humanitarian disaster, and prioritizing which locations need which items.

Future research could explore the creation of a model to efficiently match in-kind items with the disasters and victims that truly need them. Likewise, additional research regarding how many in-kind donations are wasted or poorly utilized could shed light on waste management and the effectiveness of donations.

Restricted, or earmarked, funds are contributions given by donors to be used for a specific purpose. According to Burkart et al. (2016), "Donor preferences can manifest themselves in earmarked donations with a donor-defined usage restriction for certain purposes only. Conflicting stakeholder goals and interests result in suboptimal use of funds" (Burkart et al., 2016). These stakeholders can include donors, volunteers, nonprofit organizations, and countries needing aid. As submitted by Burkart et al. (2016), if the donor's interest does not align with what is needed by the affected country, the funds will sit, because they can be used only for the earmarked need. In addition, Bhattacharya et al. (2014) confirm that donors who provide earmarked funds expect them to be utilized for the designated purpose, adding that this "makes it difficult for aid programs to share or pool resources. The situations where donors provide earmarked donations for disaster preparedness depend on the type of adverse event and the policy of the aid agency." Aflaki and Pedraza-Martinez (2016) add that if a humanitarian organization (HO) does not want to accept earmarked donations, it should expect fewer donations, as donors are more comfortable giving to a specific cause or for a specific need, and people want to be able to trust an organization to utilize their donation for a specific purpose. In many cases, a general fund or annual fund is used to cover operational or overhead costs and not for its intended purpose to support the mission of the nonprofit organization. Future studies could investigate nonprofit efficiency by analyzing overhead costs.

If Hos and nonprofit organizations do not efficiently utilize their funds and donations, it may be difficult for them to retain their philanthropic supporters. According to Scarpin and Silva (2014), donors that engage with nonprofit and Hos are following their preferences for a certain type of donation. Work by Besiou et al. (2014) created a model for decision-making in socially responsible operations, with a focus on vehicle supply chains (VSCs) in international humanitarian organizations (IHOs). They found that decentralized VSCs with earmarked funding were the least effective organizations in a crisis. Contrary to expectations, the quality of service decreased the more donors there were, due to the earmarking of vehicle use (Urrea & Pedraza-Martinez, 2019).

In addition, Besiou et al. (2014) concluded that earmarked funding can negatively affect operational performance, due to donors' desire to select specific programs to fund through earmarked contributions. Like in-kind donations, earmarked donations can be difficult to manage, as they need to be used for a very specific purpose. A specific type of earmarking, known as *conditional earmarking*, gives the donor the

option to select where their funds will go; however, a fraction of the donation is used flexibly by the organization (Aflaki & Pedraza-Martinez, 2016).

Future research could examine earmarked funds in depth to arrive at more efficient utilization. Extended research could follow up on Besiou et al.'s (2014) work on the correlations between socially responsible operations and earmarked funding and between vehicle supply chains and earmarked funding.

Arguably the most unexplored donation type, unrestricted, or cash, donations, are the most needed, yet they are the least available. According to Urrea and Pedraza-Martinez (2019), "We find only two papers Aflaki and Pedraza-Martinez (2016) and Toyasaki and Wakolbinger (2014)) that address cash donations during disasters, from the point of view of earmarking and operational performance. There is an opportunity for more research on cash donations for disaster response." Urrea and Pedraza-Martinez (2019) define cash donations as "monetary resources that Hos can use to procure the items required for a response." Such donations can be utilized at the discretion of the nonprofit. However, according to Fathalikhani (2018), donors are sensitive to nonprofit efficiency. If a nonprofit has a high percentage of overhead or is utilizing resources for information disclosure, donors view the nonprofit as not efficiently managing its resources (Fathalikhani et al., 2018). With the increasing number of nonprofit organizations and humanitarian causes, It is likely donors will not be retained by an organization perceived to be wasting funds. According to Ulku et al. (2015), trust is one of the factors that is most critical to individual donors as they consider which nonprofit or HO to support. If cash is donated to an HO, the donor does not necessarily know what the money is being used for; it could be used for routine overhead costs such as salaries, instead of for disaster relief (Ülkü et al., 2015). Aflaki and Pedraza-Martinez (2016) found that by increasing the public's knowledge of development initiatives, Hos were more likely to obtain non-earmarked donations during disaster response.

Future research needs to be done on unrestricted giving during humanitarian disasters, particularly to explore how to increase unrestricted funds throughout each stage of a humanitarian disaster. This research could include ways to garner trust from donors and to cultivate and validate established relationships.

SOCIAL

In this section, the literature on humanitarian disasters is classified by the stakeholders involved; these include citizens, nonprofit organizations, governments, and others.

TABLE 4
SOCIAL

CITIZENS		
Affecting Citizens (effects on citizens)	Effects	(Franklin & Todt, 2014; Xu, 2018; Ülkü et al., 2015; Prasad et al., 2018)
Leveraging Volunteers (utilize volunteers most efficiently)	No Formal Responsibility	(Scarpin & Silva, 2014)
	Challenges of Volunteer Management	(Urrea & Pedraza-Martinez, 2019; Day, 2014)
	Volunteer Management	(Franklin & Todt, 2014; Aboramadan, 2018; Goldschmidt & Kumar, 2016; Ataseven et al., 2018; Abidi et al., 2015)
	Brand Reputation	(Aboramadan, 2018)
NONPROFITS		
Outlining NGOs (non-government organization or nonprofit)	Campaigns for Stability	(Aboramadan, 2018)
	Supply Chain Management	(Goldschmidt & Kumar, 2016; Davis et al., 2016; Prasad et al., 2018; Fathalikhani et al., 2018)
	Cost Effectiveness & Efficiency	(Oloruntoba & Kovács, 2015; Muggy & Stamm, 2014; Prasad et al., 2018; Jahre & Fabbe-Costes, 2015)
	Should Not Focus on Fundraising	(Aboramadan, 2018; Ataseven et al., 2018)
Competing Nonprofits (promote completion)	Promoting Competition	(Anjomshoae et al., 2017; Kabra & Ramesh, 2016; Muggy & Stamm, 2014; Santarelli et al., 2015; Aflaki & Pedraza-Martinez, 2016; Fathalikhani et al., 2018)
Collaboration (collaboration among nonprofit organizations)	Increase in Collaboration	(Prasad et al., 2018; MacIndoe & Sullivan, 2014; Gazley & Guo, 2015)
	Barriers	(Bealt et al., 2016)
	Cost Savings	(Muggy & Stamm, 2014)
GOVERNMENT		
Countries in Need	Governments Accepting Aid from Outside Sources	(Kunz & Gold, 2017)
Government Aid (providing support for suffering countries)	Governments as Gatekeepers	(Kunz & Reiner, 2016)
	Direct Effect	(Banomyong & Julagasigorn, 2017; Ülkü et al., 2015; Toyasaki, Arikan, Silbermayr, & Falagara Sigala, 2017)
Politics (effect on humanitarian disasters)	Political Effects	(Kunz & Gold, 2017; Ülkü et al., 2015; Antai et al., 2015)
OTHER		
Social Responsibilities (concerned with social image)	Increasing Social Responsibility	(Urrea & Pedraza-Martinez, 2019; Besiou & Van Wassenhove, 2015; Exley, 2018; Burns, 2015)

Citizens

The citizens affected by a humanitarian disaster were not the focus of our research and are not discussed here in great detail. According to Prasad et al. (2018), humanitarian aid in developing countries affects many citizens and vulnerable communities. In addition, they discuss the value streams that NGOs engage in, including education, healthcare, and income generation, all of which may affect thousands of citizens and result in data procurement that can be utilized for evaluation purposes. The focus of the study sample was really the role of nonprofits in humanitarian disasters; however, more research can be conducted on the actions of nonprofits and their positive and the negative impacts on the citizens of an affected country.

The stakeholder group most discussed is volunteers, those who contribute their time and talents to ensure that the mission of the organization is being met. According to Ataseven et al. (2018), dedicated employees and volunteers contribute to a cause in unique and valuable ways through their creativity, adept handling of information, and high-level problem-solving skills (Gupta et al., 2016).

Scarpin and Silva (2014) point out that volunteers have no formal responsibility, which can often cause additional problems. They can quit at any time, leaving the agency susceptible to a loss of human capital and in need of retraining or hiring new workers to fill the void. There is often no formal training for volunteers (Day, 2014), particularly in regard to the emotional aspects of a disaster, which can affect volunteers more than other workers and hinder their behavior. On the other hand, Ataseven et al. (2018) note that some nonprofits provide volunteer training. Specifically, in reference to food banks, they mention the strict operational guidelines that outline the formal requirements for volunteers, which can include distribution, sourcing, obtaining donations, and more. We suggest that more formal research be conducted on volunteer recruitment, retention, training, and stewardship in nonprofit humanitarian organizations, so that best practices can be developed and formulated for future use.

There are also a number of strategies for increasing volunteer engagement and resources. According to Aboramadan (2018), nonprofits should utilize volunteers and human capital to promote marketing and generate funds for the organization. Nonprofits can also leverage brand reputation to recruit volunteers who are passionate about the mission and the future endeavors of the organization. Goldschmidt and Kumar (2016) discuss the benefits of supply chain channels, in particular, "increasing the visibility of supply-demand information and real-time cooperation between employees and volunteers within the organization." We suggest that future research focus on volunteer recruitment, especially of volunteers who are passionate about the mission of the organization, and that research be done on matching volunteers based on interest.

Nonprofit Organizations

Nonprofit organizations, or non-government organizations (NGOs), are arguably the most important stakeholders in relation to humanitarian disasters. These organizations provide the support needed for stakeholders to progress through the various stages of a disaster. According to Prasad et al. (2018), "a focal NGO is an entity that marshals the necessary resources, identifies needs, and has the receptive infrastructure and human resources in place to deliver the necessary humanitarian services." Theirs is the only article reviewed that discusses focal NGOs. Future work could further develop the definition and meaning of *focal NGO*, explore the differences among focal NGOs, and investigate how organizations can be intentional about the differences.

Nonprofit organizations leverage their donors and volunteers to ensure their success and to fulfill their mission. Muggy and Stamm (2014) call attention to the fact that "in between disasters, NGOs are responsible for supporting themselves financially through donations and grants." Prasad et al. (2018) add that an NGO is accountable to its stakeholders, which include volunteers, donors, agencies, and communities, because it is critical for a NGO to provide support to those that support it (Prasad et al., 2018). Nonprofit organizations are themselves considered stakeholders; however, they too bear a responsibility to all of their stakeholders, who invest time, talent, and money to ensure their success. According to Franklin and Todt (2016), there has not been a focus on emergency planning on the part of nonprofits and community organizations, which could include establishing points of contact and

communication models. Pre-disaster resource planning could be particularly beneficial to vulnerable populations such as the elderly or disabled (Goldschmidt & Kumar, 2016).

Nonprofit organizations struggle under pressure from outside organizations to become more responsive while keeping their costs down in order to better serve their stakeholders (Jahre & Fabbe-Costes, 2015). Jahre and Fabbe-Costes (2015) propose that organizations evaluate their standards and modularity, which can help them to be more effective and responsive while keeping to a strict budget. In addition, Oloruntoba and Kovacs (2015) observe that "in such humanitarian aid supply chains, INGOs and aid agencies still wring out efficiencies from their ability to save procurement costs through their ability to exercise such a switch in their choice of vendor." They touch on the importance of efficiency and cost-effectiveness in nonprofit organizations, because, especially today, nonprofits' budgets are continually decreasing, and it is essential for them to do as much as they can with as little as possible. Prasad et al. (2018) take these notions a step further, explaining that "dependency on resources (funding, relationship, etc.) can be considered pivotal to understanding the big data phenomenon in the non-profit sector. Non-profit financial vulnerability is believed to influence NGO collaborations, organizational processes, and actions" (Prasad et al., 2018).

Future work could take the data described by Prasad et al. (2018) and analyze it to provide insights into cost-effective measures that nonprofit organizations could implement during each stage of a humanitarian disaster. A model could be created for nonprofits to use as a reference on how to best utilize data to save resources.

In addition to fiscal pressure, nonprofit organizations struggle with effectiveness and the disclosure of information, which can affect which donors will support them (Fathalikhani et al., 2018). According to the selected literature, one of the problems for nonprofits is that local governments confronting a humanitarian disaster often do not have programs in place to establish partnerships with local businesses and nonprofits to aid in supply chain management, including supplying resources and transportation, and distributing material (Goldschmidt & Kumar, 2016). In addition, Franklin and Todt (2016) caution that without proper coordination, local businesses and organizations may compete for limited resources during a recovery and thereby interfere with their distribution. Urrea and Pedraza-Martinez (Urrea & Pedraza-Martinez, 2019) provide an example regarding the response phase of the October 2016 hurricane that struck Haiti:

> By October 10, an appeal of US $119 million was launched and HOs started to respond to humanitarian needs with different projects in diverse sectors, such as emergency shelter (accommodating displaced population), food security (distributing food), and healthcare (preventing diseases such as cholera and malaria).

Other nonprofits can learn from examples such as these about ways to provide aid during a humanitarian disaster, including shelter, food, healthcare, and more. An interesting study could focus on how much money a sample of nonprofits raised, how it was spent, and at what the specific stage during the humanitarian disaster it was employed.

Government

The majority of the selected literature did not discuss the governments in countries accepting aid from nonprofits during humanitarian disasters, since *government* was not one of our keywords. However, Kunz and Gold (2017) conducted a study of several countries and discussed Chad and Ethiopia, because their governments accepted aid, and the benefits and consequences of their actions. They recounted, "The cooperative behavior of the government of Chad finally made it possible for the organization to accommodate this governmental contingency factor and so import." However, Ethiopia was different. There, "Organization D" experienced long importation delays and travel restrictions, and after years of dealing with government red tape, it withdrew its operations.

Further research and case studies could be performed analyzing governments that need aid after humanitarian disasters. This data may be more readily available with a wider search.

Government aid, or governments that offered help during humanitarian disasters were discussed more extensively in our sample than the governments of countries needing assistance. According to Ulku et al. (2015), a country's leader can, directly or indirectly, affect disaster relief and its impact on citizens, based on political or personal preferences and beliefs. Furthermore, governments may choose to donate due to established relationships with an affected country or to preserve natural resources. Kunz and Gold (2017) agree, stating that governments also serve as gatekeepers, deciding which products and services to allow in and out of their country, and at what expense. This can include tariffs, as we are seeing today, or other regulatory actions (Kunz & Gold, 2017). Toyasaki et al. (2017) echo Kunz and Gold (2017), noting that governments are responsible for last-mile distributions; these are donations that are contributed by outside organizations which need to be delivered to their final destination. On the other hand, Banomyong and Julagasigorn (2017) indirectly refer to governments as "community leaders"; these stakeholders can increase the accessibility and distribution of supplies to specific communities, enhancing communication with the local population. Banomyong and Julagasigorn (2017) have an overall positive outlook on the influence of government aid, whereas others have focused on government restrictions during a disaster. Additional research could point out the governments that most willingly accept and facilitate aid during humanitarian disasters in their country.

Politics were not discussed in great detail, nor were they the focus of our literature search; however, politics inevitably exert an influence on governments and nonprofits during humanitarian crises. According to Oloruntoba and Kovacs (2015), the political environments in which humanitarian initiatives have to function are dynamic, and in light of the last ten years, as new countries, institutions, and INGOs have entered the scene, it is likely that supply chain practices are evolving (Kabra & Ramesh, 2016).

The outlook of Oloruntoba and Kovacs (2015) on political environments and their effects on humanitarian action are positive; however, further research could examine the political environments of countries and how they negatively affect international aid from nonprofit organizations. In addition, Ulku et al. (2015) claim that a country's leadership directly affects disaster aid, especially aid for affected citizens.

A potential for future work could lie in researching the United Nations' outlook on humanitarian aid and its partnerships with nonprofit organizations. Perhaps protocols and models could be developed that align with the United Nations' mission to enhance the well-being of citizens of affected areas who cannot help themselves.

Other

Social responsibility is becoming more of a topic of discussion as the world becomes smaller and more integrated due to social media and media coverage, as discussed above. According to Besiou and Van Wassenhove (2015), population growth, with its cycles of consumption and waste, are exhausting the planet's capacity to sustain it. "The mounting frequency of natural disasters and the widening gap between developed and developing countries present more than an environmental challenge; governments, non-governmental organizations (NGOs) and consumers are pressuring businesses to become more socially responsible as well" (Besiou & Van Wassenhove, 2015).

Social responsibility, as outlined by Besiou and Van Wassenhove (2015), touches on the gap between those who have and those who do not – the developed and non-developed countries. Those who have time and resources to give are able to do so, and social responsibility implies that it is their responsibility to help in situations such as humanitarian disasters, where the citizens affected cannot help themselves. In addition, Besiou and Van Wassenhove (2015) point out that there is an increase both in markets for sustainability and in companies looking to make more of a social difference. Now is the time to leverage these opportunities to enhance social responsibility.

We suggest that future work analyze what companies and government agencies are doing currently to promote social responsibility and how can this be streamlined and deployed across all humanitarian disaster situations.

CONCLUSION

Philanthropy is one of the most important activities of nonprofit organizations and supply chain management during each stage of a humanitarian disaster. Lessons learned from prior humanitarian disasters have shown that nonprofit support, including philanthropic gifts and volunteers, can provide the stakeholders affected by the disaster with the means to rebuild and reestablish their community. Nonprofit organizations support emergency disaster management by providing stakeholders with critical and necessary communication channels and technology to improve information flow, by educating about gift types, by securing philanthropic support, and by leveraging the relationships of various stakeholders, including donors, volunteers, governments, and other nonprofit organizations.

However, substantial research still needs to be conducted to address the challenges confronted by nonprofit organizations in humanitarian disasters. As outlined by our research and details in each section, there are a number of areas for future work identified under each of our four main topics: the stages of a disaster, communication and technology, finance and philanthropy, and social. Future work could include considering futuristic distribution methods, reducing lead time to enhance efficiency, creating partnerships, differentiating the stages and needs of a disaster, and evaluating tools and techniques for assessing nonprofits' aid at each stage. Advancing the research for communication and technology could include quantifying the negatives and positives of media exposure, finding ways to leverage media exposure to increase philanthropic support, and studying correlations between the minutes of media exposure and the amounts and types of donations. Further research could also explore social media and crowdsourcing, including investigating various platforms and their sustainability, and ways to reach the largest audience. Under finance and philanthropy, we found many gaps in the selected literature that indicate future work could include creating a model for more efficient use of in-kind donations, figuring out how to increase unrestricted funding, leveraging the psychology behind individual donors, and formulating best practices for nonprofit philanthropic activity cycles. Lastly, future work in the social classification should include analyzing volunteers, including their recruitment, training, retention and stewardship; using data to drive results; analyzing government aid in humanitarian disasters; and identifying best practices for future disasters.

In conclusion, the literature from the past five years provides an excellent resource for demonstrating the importance of philanthropy in a humanitarian disaster. More specifically, the aid provided by nonprofits and how it correlates with supply chain management during the various stages of a disaster have been overlooked and understudied. Progress on this agenda will create a foundation for the development of best practices and effective evaluations, tools, and methods that can enhance the efficiency of nonprofits during each stage of a humanitarian disaster.

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