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Humanitarian organization culture and humanitarian organization usage of digital cash-based assistance: the mediating role of financial service providers' technology readiness

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Abstract

Purpose – The study examined the influence of humanitarian organizations' culture and financial service providers' technology readiness on the usage of digital cash-based assistance by humanitarian organizations, the influence of Humanitarian Organization Culture on Financial providers' technology readiness and the mediating role of financial service providers' technology readiness on the relationship between the culture in humanitarian organizations and their usage of digital cash-based assistance.

Design/methodology/approach – A quantitative cross-sectional survey design was used. The target population consisted of humanitarian organizations that were members of the Uganda Cash Consortium (UCC). The research hypotheses were tested using SMART PLS version 4.

Findings – The culture in humanitarian organizations and financial service providers' technology readiness positively influences the usage of digital cash-based assistance by humanitarian organizations during humanitarian crises, and humanitarian organizations' culture positively influences financial service providers' technology readiness. Financial service providers' technology readiness fully mediates the relationship between the culture of humanitarian organizations and the usage of digital cash-based assistance by humanitarian organizations during humanitarian crises.

Research limitations/implications – The study mainly focuses on culture in humanitarian organizations and financial service providers' technology readiness when examining the usage of digital cash-based assistance during humanitarian crises. Further, financial service providers' technology readiness is examined using a humanitarian organization, financial service provider and beneficiary/persons of concern's point of view rather than the government's point of view.

Originality/value – Research examining determinants for digital cash-based assistance usage in humanitarian crises is scarce. Further, empirical research examining the influence of the humanitarian organizations' culture and financial service providers' technology readiness in promoting the usage of digital cash-based assistance in humanitarian crises, the impact of humanitarian organizations' culture on financial service providers' technology readiness and the mediating role of financial service providers' technology readiness on the relationship between the culture of humanitarian organizations and usage of digital cash-based assistance in humanitarian crises are non-existent. The majority of research and grey literature focuses on how digital cash-based transfers can be used to enhance financial inclusion in refugee contexts.

Keywords Humanitarian organizational culture, Financial service providers' technology readiness, Usage of digital cash-based assistance, Humanitarian crises

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1. Introduction

The use of digital payments or e-transfers in humanitarian supply chains has increased significantly in recent years (Better than Cash Alliance, 2021). Digital cash payments were introduced by private telecommunication providers in several countries around the world, especially in Africa, Asia and Latin America (Must & Ludewig, 2010). Digital cash-based assistance refers to the transfer of money or vouchers from the implementing agency to beneficiaries that are in this case refugees or persons of concern (William, 2022). Such transfers provide access to cash, goods and/or services through mobile devices, electronic vouchers or cards (e.g. prepaid ATM, credit or debit cards) (William, 2022; Kajol, Singh, & Paul, 2022). The term E-transfer is an umbrella term for e-cash and e-vouchers. Card-based systems allow the beneficiary to access cash (or commodities) via ATMs or payment merchants, possibly without the need for a bank account. Mobile transfers are a form of cash transfer occurring over the mobile network (Organisation for Economic Co-operation and Development (OECD), 2018; William, 2022). However, the concrete design of digital money services may not be similar; the general idea is to enable cheap and reliable money transfers between people who have access to them. Despite its huge potential and the presence of various forms of digital payment modalities, mobile phone payment remains a normal practice most especially in a few countries (Khairun & Yasmin, 2010). Further, the effectiveness of digital cash-based transfers depends on the level of digitization in humanitarian organizations and financial markets, and the availability of digital cash-based assistance modalities by beneficiaries (Juntunen, Kalla, Widera, & Hellingrath, 2023).

Besides the above, it is believed that donors and humanitarian organizations are looking for organizations to provide cash digitally not only because it offers cost-efficiency, but also because it promises to be more transparent (World Bank, 2016; Maghsoudi, Harpring, Piotrowicz, & Kedziora, 2023). Furthermore, by using technology in humanitarian responses, organizations could detect needs earlier; and increase the speed of assistance. On top of that, using technology can improve accountability, while simultaneously it can reduce corruption (Smith, MacAuslan, Butters, & Tromme, 2011; Maghsoudi *et al.*, 2023; Maghsoudi & Abakar, 2024). Also, due to the lack of humanitarian aid workers on the ground, recipients of humanitarian aid are forced to become "owners of their own recovery" whilst "digital humanitarianism stands primed to provide a remote, cost-effective, online self-help solution" (Duffield, 2016). Despite its importance, empirical research examining the predictors of digital cash-based assistance is scarce. Further, whereas there is increased advocacy for using digital cash in the humanitarian field, little is known about the role of the humanitarian organization's culture and the technology readiness of the financial service providers in enhancing the use digital cash transfers by humanitarian organizations during refugee crises. Besides, existing research on Digital Cash Based Assistance (DCBA) is majorly qualitative (Pinna, 2020; Kayastha, Shrestha, & Agung, 2022), and focuses on benefits, risks and implementation challenges or drivers and inhibitors (Maghsoudi *et al.*, 2023; Balakrishnan & Shuib, 2021). Other studies look at the relevance of digital cash (Mehta, Patel, & Mehta, 2016; Ford, 2017) while others examine mobile money transfers in contexts other than the humanitarian context with financial inclusion, household consumption and continuance intentions among others (Apeti, 2023; Odoom & Kosiba, 2020; Bongomin & Ntayi, 2020).

Uganda hosts the world's fastest-growing refugee population – today, the country hosts over 1.5 million refugees (United Nations High Commission for Refugees (UNCHR), 2021). According to the Ugandan Protection Policy of 2015, the introduction of cash transfers in Uganda's humanitarian programming was an outcome of a 2013 agreement between the World Food Programme (WFP), UNHCR and the Office of the Prime Minister (OPM) that cash transfers were appropriate and should be implemented on a pilot basis. Since then, humanitarian organizations have collaborated to deliver humanitarian assistance to refugees

via digital cash transfer platforms and committed time to navigate fast-moving regulatory environments and iterating projects along the way. However, despite that, and based on the interviews conducted with the cash-based assistance transfer managers in five humanitarian organizations; Finish Refugee Council (11/08/2022), Norwegian Refugee Council (10/08/2022), Uganda Red Cross (12/08/2022), Danish Refugee Council (2/08/2022), and World Food Programme (28/07/2022) on the uptake of the digital cash transfers, feedback still shows that there are still low levels of adoption of digital cash-based assistance. Scholars including Demir, Pesqué-Cela, Altunbas, and Murinde (2020), Kajol *et al.* (2022), McLean, Osei-Frimpong, Al-Nabhani, and Marriott (2020), Talwar, Dhir, Khalil, Mohan, and Islam (2020) call for more research on the underlying causes of digital cash transfer usage due to the presence of low diffusion rates of digital cash-based transfers. Besides, Katutu in an interview held on 28th/07/2022, some staff and supervisors of humanitarian organizations in Uganda embrace the use of digital cash payments with laxity despite the contributions of Information Technology (IT).

Besides the above, financial assistance is critical to meeting the basic needs of refugees, yet traditional forms of aid such as physical goods and services can be expensive, inefficient and unsustainable. One promising solution that has emerged to address the challenges of traditional aid is digital cash-based assistance, which not only offers a more efficient and cost-effective way to provide financial assistance to refugees, but also allows them to purchase the goods and services they need most to meet their basic needs. By leveraging technology to distribute financial assistance, humanitarian organizations can better tailor their support to the individual needs of refugees, ensuring that they receive the support they need to rebuild their lives and contribute to their communities. By enabling refugees to access financial resources digitally, digital cash-based assistance can provide a more cost-effective and flexible alternative to traditional aid. However, the successful implementation of cash-based assistance programs relies heavily on the technological capabilities and readiness of financial service providers (vendors) involved and the organizational culture inherent in humanitarian organizations.

Thus, the study aimed to examine the impact of humanitarian organizational culture and financial service providers' technology readiness on using digital cash-based assistance by humanitarian organizations in humanitarian crises. To address the research problem and achieve the intended objectives, four research questions are established that include:

RQ1. Does organizational culture in humanitarian organizations impact the usage of digital cash-based assistance by humanitarian organizations in humanitarian crises?

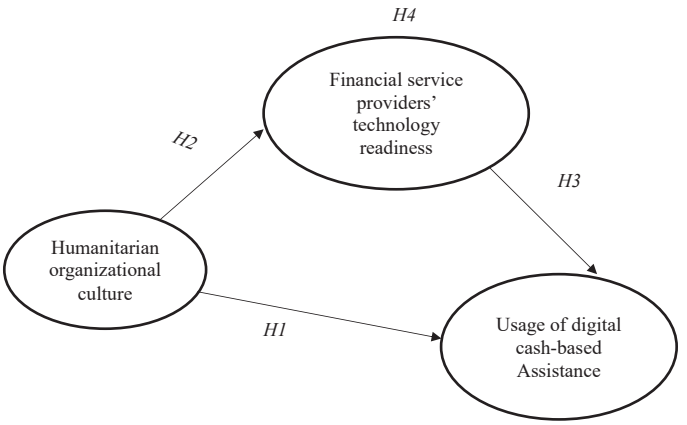
RQ2. Does financial service providers' technology readiness impact the usage of digital cash-based assistance by humanitarian organizations in humanitarian crises?

RQ3. Does the organizational culture of humanitarian organizations impact financial service providers' technology readiness in humanitarian crises?

RQ4. Does financial service providers' technology readiness mediate the relationship between humanitarian organizational culture and using digital cash-based assistance by humanitarian organizations in humanitarian crises?

2. Literature review

This section presents a review of the literature based on the four established hypotheses (see Figure 1). The section also presents the Theory used in explaining the variables in the conceptual framework.



Source(s): Figure courtesy of Dubey *et al*. (2022); Kiefer *et al*. (2021); Dhawan and Zollmann (2023); Abdelgawad *et al*. (2023); Reach (2022)

Figure 1.
Conceptual framework

2.1 Theoretical perspective: unified theory of acceptance and use of technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT) is one of the Theories that have been used in explaining technology acceptance in the organizational culture context (Silic & Back, 2013; Borg & Hedlund, 2019); technology acceptance or adoption (Sarfaraz, 2017; Ojiaku, Ezenwafor, & Osarenkhoe, 2024; Nawafleh & Fares, 2024). In addition, the Theory has also been used in explaining technology readiness (Tsourela & Roumeliotis, 2015; Dube, Eck, & Zuva, 2020) although not in the humanitarian context. In addition, the use of digital cash-based assistance in humanitarian crises is a newly introduced approach where the UTAUT Theory hasn't been applied nor tested and the limited research available is majorly qualitative. Whereas there may be a huge body of literature on Information Technology adoption, the literature or research is for other contexts such as marketing. This research focused on the humanitarian contexts where the environment is completely different from other environments where earlier research on IT adoption has been done.

Besides using the Theory in explaining the variables, organizational culture is taken to be an antecedent of the UTAUT Theory that affects a firm's propensity to embrace and use technology (Dasgupta & Gupta, 2011).

2.2 Humanitarian organizational culture and usage of digital cash-based assistance by humanitarian organizations in humanitarian crises

Organizational culture is a concept that has been explored for more than a decade now. However, the majority of the research on organizational culture is covered in other sectors other than the humanitarian sector. A dearth or no research exists on the impact of humanitarian organizational culture on using digital cash-based assistance in humanitarian crises. Organizational culture refers to values, shared beliefs or symbolic ideals to which individuals in a given organization ascribe (Melitski, Gavin, & Gavin, 2010). Most of the literature relates to organizational culture and technology adoption. Organizational culture is an important factor in the implementation of new technologies (Dubey, Bryde, Dwivedi, Graham, & Foropon, 2022; Kiefer, Van Dinther, & Spitzmüller, 2021; Abtahi, Farhana, & Hasan, 2023). Similarly, a culture that values both an external focus and an internal focus maximizes the efficient use of digital innovations (Harvey, Palmer, & Speier, 1998). Besides, culture is a critical factor in digital transformation (Chehade, McConaghy, & Meier, 2020) and

enhancing digital or technology usage (Dahabreh, 2023). Thus, organizations create a digital culture by adapting their culture to the digital payment format (Chehade *et al.*, 2020). Further, organizational cultures shape how organizations choose to use technology (Manoharan, Melitski, & Holzer, 2023). A change in culture in organizations involved in humanitarian supply chains is required to enhance technology adoption (Kabra, Ramesh, Jain, & Akhtar, 2023). In addition, Yusof, Hariri, Taheer, and Omar (2018) argue that organizational culture impacts the adoption rate of electronic payment systems. Thus, given the above discussion, it can be hypothesized that:

H1. Humanitarian organizational culture positively influences the usage of Digital cash based assistance by humanitarian organizations in humanitarian crises.

2.3 Humanitarian organizational culture and financial service provider's technology readiness

Humanitarian organizations experienced a gradual shift in their cultures from the use of physical cash to digital cash-based assistance (Akbari, Swift-Reeves, Goodman, & Barca, 2023). These cultures stem from the mission of the humanitarian organizations (Dubey *et al.*, 2019) which focuses on enhancing the adoption of digital cash by beneficiaries and financial service providers. Such a change in culture places pressure on the financial service providers to revisit their operation strategies in the settlements. This is because humanitarian organizations deliver digital cash transfers by working closely with financial service providers that have the required networks and expertise to deliver cash in this way (Ford, 2017). Further, previous research shows that culture has an impact on technology readiness when it influences participants' technology readiness (both the financial service-providing firms and refugees) (Lu, Wang, & Hayes, 2012). Also, Dubey *et al.* (2019) advance that organizational culture is critical for information technology (IT) adoption and diffusion and is found to have a significant role in the success of technology implementation (Samsie, Rahman, Ibrahim, & Layuk, 2021), and affects a firm's propensity to embrace and use technology (Govender and Pretorius, 2015). Similarly, Mishra and Maheshwari (2024) argue that organizational culture is among the key determinants for technology readiness. Also, a culture having both an external focus and an internal focus may maximize its efficient use of innovation such as digital innovations (do Carmo Caccia-Bava *et al.*, 2006). Whereas the culture of humanitarian organizations may enhance technology readiness in financial service-providing firms, empirical research examining the impact of the culture of humanitarian organizations on technology readiness of financial service-providing firms is non-existent. Thus, given the above discussion, it can be hypothesized that:

H2. Humanitarian organizational culture positively influences Financial service providers' technology readiness.

2.4 Financial service providers' technology readiness and usage of digital cash-based assistance by humanitarian organizations in humanitarian crises

Research examining the impact of financial providers' technology readiness and usage of digital cash-based assistance by humanitarian organizations in humanitarian crises is non-existent. Existing research focuses on technology readiness and technology acceptance, technology readiness and adoption and technology readiness and e-commerce adoption (Al Nahian Riyadh, Akter, & Islam, 2009; Damerji & Salimi, 2021). Although conducted in contexts other than the humanitarian contexts, earlier researchers including Jain and Singh (2024), Hong and Park (2024) and Damerji and Salimi (2021) argue that technology readiness enhances technology adoption. From the grey literature, Financial Service Providers (FSPs) deliver cash electronically through banking or mobile money services (Reach, 2022). Mobile

money payment firms looking to improve their services consider optimization of their applications to accommodate technology readiness and acceptance factors. Financial providers' Technology readiness and Acceptance factors for the use of digital cash-based assistance by humanitarian organizations include beneficiary preferences, the inclusion of all vulnerable refugee groups, safety and security, transaction costs and speed of delivery are key for the use of digital cash-based assistance (Reach, 2022). Further, assistance is increasingly provided using digital financial services that include mobile money because it enables persons of concern to receive cash assistance in an efficient and timely manner (Uganda Refugee Response Plan (RRP), 2023). With the above discussion, it can be hypothesized that:

H3. Financial service providers' technology readiness positively influences the usage of Digital cash-based assistance by humanitarian organizations in humanitarian crises.

2.5 The mediating role of financial providers' technology readiness on the relationship between humanitarian organization's culture and the usage of digital cash-based assistance by humanitarian organizations in humanitarian crises

Research examining the mediating role of financial service providers' technology readiness on the relationship between humanitarian organizations' culture and usage of digital cash-based assistance by humanitarian organizations in humanitarian crises is non-existent. The majority of the work done on digital cash-based assistance is located in the grey literature and focuses on the contribution of digital cash-based assistance to financial inclusion in refugee contexts (ACODE, 2021; Dhawan & Zollmann, 2023; Abdelgawad, Khan, & Baharmand, 2023). Grey literature shows the presence of a link between humanitarian organizational culture and financial providers' technology readiness. Digital Cash transfer programs in humanitarian organizations pressure financial service providers to improve their technology readiness in various refugee settlements (USAID, 2019). The operating capacity of the financial service providers is assessed before involving them in digital cash-based transfers. Besides, financial service providers view humanitarian cash programs as attractive business opportunities worth investing in thus improving their technology readiness (Cash working group, 2022). Technology readiness of financial service providers results in the use of digital cash-based transfers. The use of digital cash-based transfers may be limited when the speed of the digital cash transfer transactions is low, digital cash transfer systems are not accessible, and inconvenient to beneficiaries, and when financial service providers are experiencing liquidity problems among others (Bommart, 2021).

Besides the humanitarian field, research conducted in other contexts such as SME manufacturing firms shows that both organization culture and technology readiness may impact information technology usage in e-commerce transactions (Abtahi *et al.*, 2023). Further, Mishra and Maheshwari (2024) advance that the culture in an organization determines its technology readiness and the level of readiness enhances technology usage or adoption. Thus, it can be hypothesized that:

H4. Financial service providers' technology readiness mediates the relationship between humanitarian organizational culture and the usage of Digital cash based assistance by humanitarian organizations in humanitarian crises.

2.6 Construct measurement development for financial service providers' technology readiness

Earlier research advances, Coverage, Speed and Timeliness, Cost Effectiveness and the User Friendliness of digital payment technology (Sandvik, Van Daal, & Adèr, 2014); User

Friendliness, Security and Compliance and Speed and Timeliness (Di Domenico, 2006) and speed, reliability, enjoyment of use, control and awareness of risks associated with technology (Trachuk & Linder, 2017) as measures for technology readiness.

Grey literature in the humanitarian field points to the capacity of the technology to meet program objectives, the level of market functionality, transactional costs, implementation capacity and financial infrastructure, and the ability to manage risks (World Bank, 2016); cost effectiveness, coverage, safety and timeliness (Maghsoudi & Abakar, 2024); interoperability and network coverage (Perdomo & Buzurukova, 2023); flexibility for the beneficiary to withdraw their cash at a time they choose (UNCHR, 2019); accessibility and network coverage, convenience, privacy, agency density, transaction costs, interoperability and security (U-Learn, Ukaid and Cash working group, 2022); agent network, network coverage, regulatory environment, speed and convenience, security and partnership (GSMA, 2023); easiness to use, speed and security (OXFAM, 2022) and liquidity, interoperability and compliance (German cooperation, UKaid, & Social Protection, 2020) as key factors for a technologically ready financial service provider. Despite the suggested digital payment interventions, Abdelgawad *et al.* (2023) show that current research provides no evidence-based feasibility requirements for measuring financial service providers' technology readiness in refugee contexts.

3. Method

This section presents the research design, study population, sample size, sampling methods, data collection and preliminary analysis results.

3.1 Research design

A quantitative and qualitative cross-sectional survey design was used. Cross-sectional surveys are when information has to be gathered at a single point in time. The study involved testing research hypotheses; thus a quantitative study was also employed. Further, the study involved developing and testing measures for financial service providers' technology readiness thus an inductive approach had to be used.

3.2 Population of the study, sampling and sample size

The target population consisted of humanitarian organizations that were members of the Uganda Cash Consortium (UCC). A total of 77 humanitarian organizations were considered (Uganda Cash Working Group Report, 2023). The unit of analysis was International and local humanitarian organizations that subscribe to the Uganda Cash Consortium. The unit of inquiry consisted of five members of the program team and five on the logistics team who were directly involved in cash distribution. This was because these members had adequate information about the usage of digital cash-based assistance in humanitarian crises, making a total of ten respondents from each organization. The respondents were selected purposively. Because ten people were selected from each organization, the data collected was aggregated to the unit of analysis.

Out of 77 Humanitarian organizations, a sample size of 65 humanitarian organizations was considered. The sample size was determined using Krejcie and Morgan (1970). The firms were selected using the rand ( ) function in Excel. Random values were generated for each firm and the firms were arranged in ascending order beginning from the smallest to the biggest whereafter the data was collected.

3.3 Qualitative data collection and analysis

Qualitative data used in the development of the measurement constructs for financial service providers' technology readiness was collected through interviews from 9 humanitarian

organizations, 4 financial service-providing firms serving refugees in the settlements and refugees/beneficiaries/persons of concern from 13 settlements. Collected data was recorded and transcribed and later analyzed using Atlas ti version 23. The recordings were transcribed verbatim and the spoken words were converted into written text, the research ensured that data remained accessible and ready for rigorous analysis. The reliability and validity of the collected data were ensured by focusing on data credibility, understandability, dependability and consistency among others. Besides that, interviews were conducted till a saturation point was reached.

Code trees were developed by connecting dots. The code trees were essentially hierarchical structures of codes, drawing relationships and identifying underlying patterns. The derived code trees later acted as pillars for the financial service providers' technology readiness measures, thus providing a scaffold upon which the research's conclusions were built.

Once developed (see Table 1), quantitative data was collected on the developed measures and a factor analysis was run to obtain the true measures for the financial service providers' technology readiness based on the factor loading. All identified measures were found relevant to the financial service providers' technology readiness variable.

3.4 Quantitative data collection and analysis

Quantitative data were collected through a drop-off and pick-up method using a questionnaire. The items were plotted on a 5-point Likert scale. The usage of digital cash-based assistance by humanitarian organizations was measured using bank money transfers, mobile money transfers and cheques using Venkatesh, Morris, Davis, and Davis (2003) while humanitarian organizational culture was measured using vision and goals, values, norms and beliefs using measures of Bettinger (1989), and Parida, Raina, and Narayan (1990). For the case of financial service providers' technology readiness, measures were developed and tested in this research.

Quantitative data were entered in the Statistical Package for Social Scientists software (SPSS). Using both the SPSS and SMART PLS software, preliminary tests for normality, collinearity, reliability, common method variance and construct validity (convergent and discriminant validity) were carried out. Normality and common method variance tests were obtained using SPSS while reliability and construct validity (convergent and discriminant validity) results were obtained using SMART PLS. Skewness values for the variables were less than 2 while kurtosis values were less than 7 (see Appendix 1) as suggested by Xiong and King (2015). There were no collinearity issues as the Variance Inflation Factors (VIF) were below 10.0. Common method variance values were below 0.50 (see Appendix 1) and such common method variance results do not affect research findings. Reliability values were above 0.80 way beyond the recommended threshold (Nunnally & Bernstein, 1978) (see Appendix 1), while composite reliability values were above 0.40 implying the existence of convergent validity (Taks, Chalip, & Green, 2015) (see Appendix 1). Similarly, average variance extracted values (AVE) were 0.50 and above supporting the presence of convergent validity. Discriminant validity values obtained using the heterotrait–monotrait method were below the set threshold of 0.9 (Friman *et al.*, 2019; Henseler, Ringle, & Sarstedt, 2015) thus indicating the presence of discriminant validity (see Appendix 2).

3.5 Factor analysis

A factor analysis examines the relationship between the measurement items and their constructs. The constructs in this study included the usage of digital cash-based assistance, financial service providers' technology readiness and humanitarian organizational culture. The factor analysis was run using SMART PLS. All items for the constructs had loading higher than 0.30 (see Tables 2–4).

Dimension	Criteria of measurement	Measurements items	Unit of measurement
Coverage	Reach and accessibility of the financial service provider	Number of financial service provider branches/agents, mobile network coverage, internet access, regional coverage consistent with the Number of areas served by the HO per region, lists of the areas	Areas/Regions Number, Percentage
Reliability	Consistency and dependability of the service provider	Uptime, availability or System downtime, number of failed transactions or transaction failure rate, float availability (absence of liquidity challenges)	Percentage number
Security and compliance	The degree of security and Compliance with legal and regulatory requirements, and data security	Number of audits passed, security certifications, regulatory adherence or Number of security breaches/ incidents, compliance records	Certificates/ Checks Number records
Cost effectiveness	Costs involved in implementing digital cash-based transfers Affordability and efficiency of the service	Cost per transaction, setup costs, ongoing fees or Service fees, transaction costs, overall cost per beneficiary	Currency Currency (UGX, USD)
User experience and accessibility	Ease of use, literacy requirements and accessibility to all, including disabled persons	Number of languages supported, ease of use ranking, accessibility features	Ranking/Number
Speed and timeliness	Speed of transactions and responsiveness to emerging needs	Transaction time, delay statistics, responsiveness to urgent requests	Time (minutes/ hours)
Partnership and local integration	Alignment with local systems and ability to partner with other stakeholders	Number of local partners, integration with existing local systems Number of compatible systems, ease of integration	Number/Extent ease indicators
Innovation and scalability	Ability to innovate and scale up as per the requirements Ability to adapt the service to varying levels of demand	Number of innovations introduced, ability to handle increased load, scalability assessment Maximum transaction volume, ease of expansion to new regions/populations	Number/ Assessment, capacity indicators
User friendliness	The ease of use of the service for beneficiaries	User training required, ease of transaction, user complaint rate	Number, percentage
Transparency and accountability	Ability to track and report transactions accurately	Record keeping capability, availability of transaction reports	Records, reports
Programme requirements and implementation context	• Programme objectives National financial landscape Assessment	Cash-centric theory of change. Density and strength of financial infrastructure. Financial behaviors matching programme design	Records, reports

Source(s): Table by authors

Table 1.
Financial service providers' technology readiness dimensions and measures

	Loading
Bank money transfers	
Bank money transfers made by the financial service provider contracted by our humanitarian organization have been effective for all beneficiaries	0.796
Our humanitarian organization uses financial service providers that offer bank money transfers that are fast and reliable	0.853
Our humanitarian organization always uses financial service providers that offer bank money transfers for beneficiaries in urban and rural areas	0.878
The financial service providers' bank money transfers contracted by our humanitarian organization are not affected by network problems	0.845
Our humanitarian organization works with different banks to effect money transfers to the different beneficiaries	0.743
Mobile money transfers	
Most of the beneficiaries our humanitarian organization serves prefer mobile money transfers to other payment modalities	0.783
Our humanitarian organization views mobile money transfers as unsafe compared to other money transfer modalities	0.804
Our humanitarian organization thinks that the mobile money payment modality is easy to use	0.684
Our humanitarian organization contracts financial service providers that employ mobile money transfers alongside other money transfer methods	0.796
Our humanitarian organization contracts financial service providers whose mobile money transfer network is reliable	0.760
Cheques	
Our humanitarian organization contracts financial service providers using cheques to transfer money to selected beneficiaries	0.849
Our humanitarian organization thinks that cheques give better references and accountability	0.851
Most of the beneficiaries our humanitarian organization serves are well conversant with cheques	0.853
Our humanitarian organization allows cheques as a mode of payment to beneficiaries who are both in urban and rural areas	0.862
Our humanitarian organizations finds cheques as a friendlier and familiar payment modality to all people	0.863

Source(s): Table by authors

Table 2. Usage of digital cash based assistance factor analysis results

4. Findings

This sub-section provides and discusses findings obtained as a result of texting the four established hypotheses including the influence of humanitarian organizational culture on the usage of digital cash-based assistance by humanitarian organizations in humanitarian crises, the influence of financial service providers (FSPs) technology readiness on the usage of digital-based Assistance by humanitarian organizations in humanitarian crises; the influence of humanitarian organizational culture on Financial providers' technology readiness and the mediating role of financial service providers' technology readiness on the relationship between organizational culture and the usage of digital cash-based assistance by humanitarian organizations in humanitarian crises. Below is the presentation and discussion of the findings.

4.1 Humanitarian organizational culture and usage of digital cash-based assistance by humanitarian organizations in humanitarian crises

Findings indicate that the humanitarian organization's culture positively influences the usage of digital cash-based assistance by humanitarian organizations in humanitarian crises ($\beta = 0.711$; $p \leq 0.001$). The results imply that organizations that have values, visions and

	Loading
Vision	
Our humanitarian organization's vision clearly clarifies our business's meaning and purpose for stakeholders	0.866
Our humanitarian organization's vision is intended to state the current and future objectives of our organization	0.737
All our humanitarian organization's goals align with our vision statements	0.763
Our humanitarian organization's goals are challenging and motivating	0.774
All our humanitarian organization's goals are specific, measurable, attainable, realistic and time bound	0.721
Beliefs	
This humanitarian organization respects the beliefs of its employees and beneficiaries	0.767
This humanitarian firm believes in time management	0.684
This humanitarian firm believes that every opinion counts	0.843
This humanitarian organization respects its workers and beneficiaries	
This humanitarian organization believes that criticism is important	
Values and norms	
We have shared values in this humanitarian organization	0.786
This humanitarian organization believes in honesty and professionalism	0.793
Maximizing and maintaining customers satisfaction is key to our humanitarian organization's work	0.758
Our humanitarian organization always uses teams to accomplish different tasks	0.744

Source(s): Table by authors

Table 3. Organization culture factor analysis results

Items	Loading
Financial service providers for our firm charge lower transactional costs for digital cash transfers	0.801
Financial service providers for our firm provide easy to use digital cash transfer technologies	0.798
Financial service providers for our firm have a reliable digital cash transfer network	0.866
Financial service providers for our firm take limited time when providing digital cash transfer services to beneficiaries	0.752
Financial service providers for our firm have accessible technologies	0.865
Financial service providers for our firm have all the necessary infrastructure in place relevant for the provision of digital cash transfer services to beneficiaries	0.821
Financial service providers for our firm have effective risk management strategies in case a problem occurs during digital cash transfer operations	0.778
Financial service providers for our firm have feedback mechanisms in place to provide accountability for digital cash transfer disbursements to refugees	0.860
Financial service providers for our firm have enough liquidity on them necessary for the smooth running of the digital transfer operations	0.808
Financial service providers for our firm ensure privacy of the information for the beneficiaries	0.714
Financial service providers for our firm ensure safety and security of the digital cash transfer transactions with beneficiaries	0.608
Financial service providers for our firm provide digital cash transfer mechanisms that are convenient to use by beneficiaries	0.741
Financial service providers for our firm innovate relevant digital cash transfer technologies to solve existing cash transfer problems in refugee contexts	0.722

Source(s): Table by authors

Table 4. Financial service providers technology readiness factor analysis results

norms that favor digital cash assistance are more likely to successfully implement digital cash-based assistance. Further, cultural values serve as the foundation for decision-making and guide human action (Leal-Rodríguez, Sanchís-Pedregosa, Moreno-Moreno, & Leal-Millán, 2023). Besides, digital financial services (DFS) are much more common in the humanitarian field in Uganda and other refugee-hosting nations such as Kenya and Ethiopia because of the shift from physical cash transfers to digital cash transfers (GSMA, 2023). Also, research conducted by the World Food Programme in Kenya shows that organizational culture influences cash-based transfers although the focus is placed on physical cash transfers (Odera, 2017). Further, previous research emphasizes that an institutional culture affects decision-making. Thus, such cultures may enhance the adoption of digital approaches during cash transfers or may hinder it (Hemerling, Kilmann, Danoesastro, Stutts, & Ahern, 2018; Roelen, Longhurst, & Sabates-Wheeler, 2018; Leal-Rodríguez *et al.*, 2023; Loonam, Eaves, Kumar, & Parry, 2018; Brunetti *et al.*, 2020).

4.2 Financial service providers (FSPs') technology readiness and usage of digital-based assistance by humanitarian organizations in humanitarian crises

The research findings indicate the presence of a positive influence of financial service providers' technology readiness on the usage of digital cash-based assistance by humanitarian organizations ($\beta = 0.639$; $p \leq 0.001$). Financial providers' technology readiness is seen in the form of reliable networks, accessibility of the technology, liquidity, ease of use of the technology, convenience, transactional costs that may be incurred when using the technology, safety and security, compliance with regulations, risk management during the digital cash transfer process, privacy, speed of delivery of the digital cash and coverage among others. These factors are enablers but their absence may inhibit (such as prohibitive withdrawal fees, and limited or no liquidity) the use of the digital cash transfer mechanism by humanitarian organizations. For example, World Food Programme (WFP) is expanding the use of digital delivery mechanisms through the use agency banking of the contracted Financial service provider (Kwetonda & Kentenyingi, 2023). Further, financial service providers' (FSP's) technology readiness varies in the various refugee settlement areas in Uganda thus resulting in the use of a particular financial product by humanitarian organizations in digital cash transfers (either mobile money usage or use of banks). Besides, financial service providers develop partnerships and engage in knowledge-sharing to come up with digital financial systems that meet the needs of humanitarian organizations (Gurung & Perlman, 2018; Kwetonda & Kentenyingi, 2023).

Despite the above, previous research on technology readiness shows that technology readiness enhances technology adoption, for instance, the adoption of airline self-service kiosks (Lee, Castellanos, & Chris Choi, 2012); and airline self-service mobile application adoption (Smit, Roberts-Lombard, & Mpinganjira, 2018). Elliott, Meng, and Hall (2012) find technology readiness fosters or hinders the adoption of new technology while Roy and Moorthi (2017) find technology readiness to result in M-commerce adoption.

4.3 Humanitarian organizational culture and financial service providers' technology readiness in humanitarian crises

The findings indicate the presence of a positive influence of humanitarian organizational culture on financial providers' technology readiness (See Figure 2). From the findings, the movement of humanitarian organizations to digitized cash-based assistance has led to the prevalence of digital financial services in the humanitarian field. For instance, the move towards the use of digital payment platforms has resulted in new technological innovations that can be used in enhancing digital cash transfers in refugee contexts. Similarly, humanitarian agencies in other nations have focused on the growth of digital financial

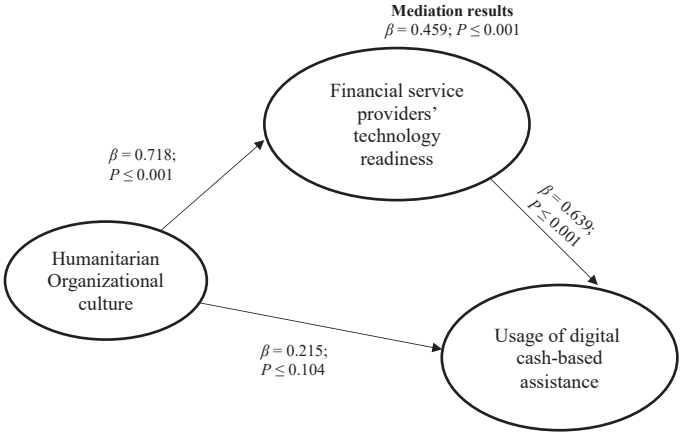


Figure 2.
Research findings

Source(s): Figure by authors

systems to deliver cash transfers using bank cards and mobile money in crisis-stricken areas (Mebur, 2021). Whereas financial service providers' technology readiness may be important, and despite the shift in humanitarian organization culture, humanitarian organizations can only use digital cash transfer platforms when appropriate (Bailey *et al.*, 2016). The findings are supported by Holm-Nielsen, Raju, and Furu (2022) who argue that changes in humanitarian organizations affect or alter the humanitarian context although the changes may be in the form of strong emotional reactions. Further, culture is seen to influence the speed at which any changes would take place.

4.4 The mediating role of financial service providers' technology readiness on the relationship between humanitarian organizational culture and the usage of digital cash based assistance by humanitarian organizations in humanitarian crises

A simultaneous mediation analysis was undertaken to examine the mediating role of the financial service providers' technology readiness. From the analysis, the findings indicate the existence of a full mediation effect of humanitarian organizational culture in the relationship between financial service providers' technology readiness and usage of digital cash-based assistance by humanitarian organizations in humanitarian crises. (See Figure 2). A full mediation effect exists because the influence of the humanitarian organizational culture on the usage of Digital Cash Based Assistance in by humanitarian organizations ceases once the Financial Service Providers' Technology Readiness variable is introduced in the model. Prior to the mediation analysis, humanitarian organizational culture had a direct influence on the usage of Digital Cash Based Assistance in by humanitarian organizations (see Appendix 3).

The findings are supported by grey literature that shows that humanitarian organizations are changing from the use of the physical cash delivery method to the use of digital financial aid to deliver assistance (Ankunda, 2022). For example, the *United Nations Capital Development Fund* (*UNCDF*) has continued to work with UN agencies and non-governmental organizations (NGOs) to ensure the adoption of a conducive environment for digital payments within refugee settlements. Also, the move by NGOs including the Norwegian Refugee Council (NRC), International Rescue Committee (IRC), World Vision and World Food Programme (WFP) in distributing cash digitally has influenced financial service providers' technology readiness (UNCDF, 2018) through developing convenient, easy-to-use, reliable technologies and the necessary infrastructure that have enhanced the use of digital cash

transfer mechanisms for aid delivery (Ankunda, 2022). Further Shiong, Qhotsokoane, and Phillips (2020) advance that mobile money operators can waive transaction charges like Safaricom, and Palmpay to make mobile an appropriate substitute for physical cash.

The results are supported by previous research that shows that organizational culture impacts technology readiness when it influences participants' technology readiness (both the financial service-providing firms and refugees) (Lu *et al.*, 2012). Other scholars like Dubey *et al.* (2019) argue that organizational culture is critical for information technology (IT) adoption and affects a firm's propensity to embrace and use technology (Govender & Pretorius, 2015). Besides culture and technology readiness, technology readiness affects user's technology adoption behavior (Rahardja, Hapsari, Putra, & Hidayanto, 2023) and enhances technology acceptance (Kim, Lee, & Preis, 2020). In addition, technology readiness influences the predisposition of a firm or individuals to use technology through motivators and inhibitors (Ritz, Wolf, & McQuitty, 2019).

5. Conclusion

The study aimed to examine the impact of the culture in humanitarian organizations on the usage of digital cash-based assistance by humanitarian organizations in humanitarian crises and Financial providers' technology readiness; the impact of financial service providers' technology readiness on the usage of digital cash-based assistance by humanitarian organizations in humanitarian crises and the mediating role of financial service providers' technology readiness on the relationship between the culture of humanitarian organizations and the usage of digital cash-based assistance by humanitarian organizations in humanitarian crises. Findings from the analysis indicate that the culture in humanitarian organizations positively influences the use of digital cash-based assistance by humanitarian organizations in humanitarian crises. Financial providers' technology readiness. Financial service providers' technology readiness positively influences the use of digital cash-based assistance by humanitarian organizations in humanitarian crises and fully mediates the relationship between the culture of humanitarian organizations and the usage of digital cash-based assistance by humanitarian organizations in humanitarian crises.

The change from physical cash disbursement to digital cash transfers in humanitarian organizations has influenced a change in the way financial service providers need to do business in humanitarian supply chains. Humanitarian organizations are ready to work with and support those financial service providers' firms that have developed digital financial products that are fit for use in digital cash disbursements in refugee contexts. The humanitarian organizations further give a hand in terms of monetary support to the financial service providers that would like to establish themselves in refugee settlements thus resulting in improved technology readiness in the financial service-providing firms. Besides, previous research also shows that the presence of technologically ready financial service providers and a digitally orientated culture in humanitarian organizations enhances digital cash-based transfers.

Besides the findings, the research has theory, policy and practical implications. The study contributes to the humanitarian supply chain theory by examining determinants for digital cash-based assistance adoption in the humanitarian supply chain context. Further, examines the influence of the humanitarian organizations' culture and financial service providers' technology readiness on the usage of digital cash-based assistance by humanitarian organizations in humanitarian crises and the mediating role of financial service providers' technology readiness on the relationship between the culture of humanitarian organizations and the usage of digital cash-based assistance by humanitarian organizations in humanitarian crises. Research examining the influence of the two variables is non-existent in a humanitarian supply chain context. The majority of research and grey literature focuses on how digital cash-based transfers can be used to enhance financial inclusion in refugee contexts.

To practice, the study contributes by examining technology readiness using a humanitarian organization perspective. The research helps in providing an understanding to financial service providers on what is expected from them in terms of technology readiness required to serve the refugee contexts. Financial service providers will be able to develop digital technologies that can be used in digital cash transfers to beneficiaries in the humanitarian supply context. However, variances in terrain, climate and cultural norms across different regions also exert influence on technical preparedness. The cultural practices of indigenous populations can shape their receptivity towards digital aid, while climatic and geographical factors affect the cost-benefit dynamics of aid deployment. These factors collectively influence the stance of financial service providers towards extending financial support.

To policy, governments will come up with policies that govern the transactional costs that are charged during digital transactions in refugee settlements. Also, policies that lead to the achievement of financial service providers' technology readiness components from a humanitarian organization perspective will be developed. For example, policies focusing on reducing taxes on digital cash transfer transactions in refugee contexts.

Like any other study, this study had limitations that included methodological and theoretical limitations. The study used a cross-sectional quantitative approach when examining the influence of humanitarian organizations' culture and financial service providers' technology readiness on the usage of digital cash transfers by humanitarian organizations in humanitarian crises. However, given that the usage of digital cash-based assistance is a behavior, then a longitudinal approach needs to be employed. Further, a qualitative approach may be used in future research to get more insights into the role of the humanitarian organization culture and financial service providers' technology readiness.

Further granularity can be applied to the analysis of corporate culture and technological readiness. For instance, exploring the types of organizational cultures that facilitate digital technology usage and the technological preparedness levels of financial service providers. Moreover, identifying specific aspects of technological readiness among financial service providers that promote technology usage by organizational culture can enhance the robustness of the findings, supported by rigorous data analysis.

Also, Government policies and perspectives warrant examination. Varying governmental stances across different regions regarding humanitarian assistance creates inconsistencies in the operational challenges faced by humanitarian organizations and the technical preparedness required by financial service providers. When local policies do not support such endeavors, the deployment of cash-based digital assistance becomes arduous, thereby significantly impacting the execution of humanitarian aid efforts.

Besides the methodological limitations, the study's theoretical limitations involve examining financial service providers' technology readiness using a government perspective. Further, future researchers may also examine the technology readiness of financial service providers using for example the technology readiness index. Also, more research is required on the effect of other factors such as the attitude of humanitarian organizations employees and tax regimes on the use of digital cash-based assistance.

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(The Appendix follows overleaf)

Appendix 1

Table A1.
Reliability, composite reliability, collinearity, AVE values and common method variance

Variables	Reliability values	Composite reliability	Collinearity statistics (VIF)	Skewness	Kurtosis	Common method variance (%)	CVI	Average variance extracted (AVE)
Usage of digital cash-based assistance	0.896	0.902		−1.443	2.102	30.40	0.744	0.589
Financial service providers' technology readiness	0.867	0.870	1.985	−1.223	1.441	28.67	0.789	0.549
Organizational culture	0.845	0.830	2.961	−1.409	2.563	35.53	0.812	0.533

Source(s): Authors' own creation

Appendix 2

Variables	1	2
Organizational culture *(1)*		
Financial service providers' technology readiness *(2)*	0.782	
Usage of digital cash-based assistance *(3)*	0.600	0.788

Source(s): Authors' own creation

Table A2. Heterotrait-mono-trait discriminant validity values

Appendix 3

Variables	Standardized estimate	*p*-value
Organizational culture → Usage of digital cash-based assistance	0.711	$p \leq 0.001$

Source(s): Authors' own creation

Table A3. Organizational culture on usage of digital cash-based assistance

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