Factors Explaining Metaverse Users' Charity Willingness: Focused on Korean Users

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ABSTRACT

From the onset of the COVID-19 pandemic, the metaverse emerged as a new platform where people interact and communicate. Of the many changes this technology introduced, people active in the virtual world do not have many opportunities to run into neighbors in need as they had before the pandemic. This research sets out to investigate what factors are associated with people's willingness to give to charity amidst the pandemic. More importantly, the group difference between metaverse users and non-users was analyzed and compared. The result shows that personal attributes like extroversion, compassion, resilience, and even academic achievement were positively correlated with people's willingness to give to charity. In the group comparison, metaverse users were more likely to give charity to people in need as opposed to non-users. The users were more likely to have received help from others, thus more willing to give back to those who needed help.

I. INTRODUCTION

From the onset of COVID-19, digital technology has entered deeper into our everyday activities. Of many such changes that the pandemic introduced, the metaverse has transformed the way people interact and became the bridge between the real and virtual worlds. Many aspects of our life shifted to online platforms because of social distancing measures that blocked human interaction. But communication on the screen alone could not provide more life-like interaction that was available in the past. This inconvenience expedited the adoption of immersive technology, which brought down the barrier between the real and virtual worlds. Various business and economic activities are taking place in metaverse platforms. Though the pandemic had died down, people grew much more accustomed to remote communications. As a result, the metaverse gave rise to new norms and practices throughout our society. And the impact of the metaverse will grow exponentially in the coming years.

But one must ruminate on what this change will bring about because a technological revolution has created victims and beneficiaries. While people pay attention to the positive outcomes, we should be concerned with the side effects. One of the major problems people's interactions taking place in virtual space is the lack of charity opportunities. Finding people in need is more difficult in virtual space than in the real world. When people walk down the street, they can easily run into homeless people asking for help. But in the virtual space, everyone is spruced up, looking extravagant. Besides, those who need help may not easily access virtual space as those in the middle class. This lack of contact with the people who need help can blind the users' eyes to the needs of society. When considering many youth and young adults are most active in the metaverse, the implication of such phenomena is far-reaching. Despite this looming social issue, little to no research is conducted to investigate how metaverse users are participating in philanthropic endeavors. Therefore, we embarked on research that would identify the factors associated with charity efforts in post-pandemic society and compare metaverse users and non-users in light of charity engagement.

II. LITERATURE REVIEW

2.1 Definition of Metaverse

The concept of metaverse was first introduced by Neal Stevenson in his novel Snow Crash (1992). At this point, the metaverse was no different from virtual reality. And it was the Acceleration Studies Foundation (ASF) that first conceptualized metaverse in 2007. ASF conducted a research project projecting the future of the internet called MetaVerse Roadmap (MVR). Here, the project predicted the advent of a merge between visualization and 3D technology that will dominate the future internet starting somewhere between 2017 and 2025 (Smart et al. 2007). So the word metaverse was coined by Stephen, but the concept was specified in the ASF project. The two pillars of the metaverse are the (1) virtually enhanced physical reality and (2) physically persistent virtual space. Moreover, ASF presented four features that make up the metaverse as presented in **Figure 1.**

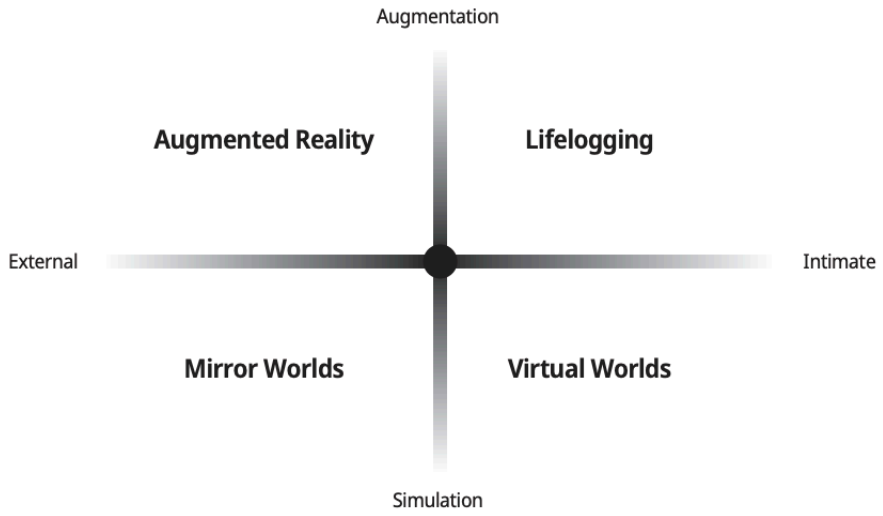

Figure 1. Four features in metaverse
Source. Smart et al. (2007)

To illustrate, the x-axis consists of internal (intimate) and external factors. The internal element indicates the technology that best represents the user identity, whereas external factors are the technology surrounding the users. Y-axis is divided into augmentation or simulation. Augmentation is the technology about control or information system, whereas simulation is the technology enabling interaction in the system. Based on these features, there are four different types of metaverse: augmented reality, life logging, mirror worlds, and virtual worlds (Smart et al., 2007). One can give credit to the ASF report for its attempt to define metaverse. Yet, the report is not academic, thus lacking theories and validity.

When NVIDIA—the global manufacturer of Graphic Processing Units—introduced Omniverse, the 3D visual platform for work collaboration, the metaverse began to flock more public attention (NVIDIA, 2021) The CEO of NVIDIA Jensen Huang introduced the metaverse as the future of the internet. Right around the same time, Roblox introduced a metaverse service at its initial public offering (IPO) (Roblox Corporation, 2020). Since then, various metaverse platforms have been introduced to the public, increasing its market volume.

Table 1. Metaverse-based Platforms

Platform	Content	# of Users
Roblox	- Users create their own virtual world and play games - Users generate profits via game development & items - cryptocurrency via "second real world" is complete	164+ million
Minecraft	- Users create virtual space by stacking blocks like Lego	112+ million
Zepeto	- 3D avatar-based social media - Users generate revenues by making AR fashion items - Blackpink virtual fan signing event surpassed 30 million and avatar performance exceeded 40 million views	200+ million
Fortnite	- Users spend time together in a party royale along with battel royale games - Travis Scott achieved 10 times more sales via virtual concert compared to offline concerts	350+ million

Source. Jeon & Jung (2021)

2.2 Metaverse as a New Computer Mediated Communication Platform

Granted, the metaverse enabled communication that was deemed possible in the physical world. At the center of its popularity lies Computer Mediated Communication (CMC) through which users express their feelings and thoughts as they would in the real world. In the beginning, CMC was primarily text-based, thus making it unfit for exchanging complex messages (Sproull & Kiesler, 1986; Spears & Lea, 1992). All this changed with the emergence of emoticons and other means to communicate users' feelings and emotions. But this new feature was not the only reason that led to the exponential growth of CMC technology and platforms. Various research revealed that CMC lessened social pressures and strengthened user privacy (Sproull & Kiesler, 1991). Therefore, these merits of improved CMC have reinforced efficiency, intimacy, and learning effects in work and everyday activities (Sullivan, 2000; Burgoon, et al., 2000; Brandon and Hollingshead 1999). Though slightly different, most of the metaverse platforms have integrated CMC features: Users can communicate their emotions via avatar, share their audio and screen when needed, and exchange texts and images (Rhee, 2022). With this new mode of communication integrated into the technology, activities happening in the metaverse is no longer fictitious. Ryan (2015) said that the word virtual is not synonymous to fictitious, nor is it unimportant and nonexistent. In fact, virtual space is a part of our real activities and interaction, reflecting individuals' thoughts, choices, and values.

2.3 Metaverse as a Channel of Self-expression

Granted, metaverse offers a unique channel through which users upload their ideal self-image. Through avatars, they may create a new self, reflecting how they want to present themselves. It is through this feature that users test different identities and feel liberated from the socially acceptable image that they maintain in real life. Murphy (2004) says that

users can test technologically unlimited possibilities, which offers a getaway from their real life. In the metaverse, users experience the embodiment of their identity or ideal self through an avatar (Featherstone & Burrows, 1995). In other words, users project their identities and their ideal self onto their avatars in the metaverse. And vice versa, the interaction they experience in cyberspace through avatars affects their self-identity, self-concept, and emotions (Gentile et al., 2009; Greitemeyer & Osswald, 2010; Yoon & Vargas, 2014). So users' identities and attributes projected onto their avatars are fairly accurate indicators of the affection, attitudes, and bonds they establish in both worlds (Suh, Kim, & Suh, 2011).

2.4 COVID-19 and Charity Norms

The pandemic has brought about many changes in life. As a measure of social distance, we made giant strides in the way we communicate, interact, and collaborate. What remains to the same is the needs of our neighbors who cannot provide for themselves. According to research conducted by Giving Korea (2020), people donated commodities and cash for those in need soon after the outbreak. The situation grew worse for the low-income those who are at a disadvantage. Despite their growing needs, the research found that fewer people participated in the charity effort since the outbreak. For charity work to continue, charity experience plays a significant role. It is evident that those who gave charity before the outbreak were willing to participate in charity efforts even after the donation channels had been shifted greatly after the pandemic (Rho & Chung, 2020). This means that young people who are more actively engaged in new platforms like metaverse must be able to give to people in need through the platforms so that they may continue their good works throughout their life. Whether it be metaverse or other online platforms, they ought to experience what it is like to help others in need because this experience persists and is contagious.

Based on the literature above, the following questions have been formulated.

Research Questions

1. What factors are associated with people's willingness to give charity after COVID19?
2. Is there a difference in charity participation between metaverse users and non-users?

III. METHODS

3.1 Data

Prior to collecting data, we explained to regarding the nature of this analysis to make sure they are properly informed. We set up an environment free of any pressure so that they may provide an honest response. Their participation was voluntary because they could receive small gifts for their participation. And for the most part, these data were collected in urban settings throughout Korea.

3.2 Analysis

Table 1. Descriptive Statistics for the Metaverse Users

variable	*N*	mean	S.D.	min.	max.
Age	239	23.80	3.17	18	29
Gender	239	.67	.47	0	1
SES	239	5.28	1.76	1	10
Family Size	239	3.33	1.28	1	6
Family Relationship	239	3.88	.91	1	5
Number of Friends	239	7.70	7.36	1	50
Using Metaverse	239	.42	.49	0	1
Donated during COVID	239	.20	.40	0	1
Received Help	239	.74	.44	0	1
Wish to Help	239	3.09	.98	1	5
Percent to Donate	239	11.14	15.18	0	90
Celebrity Influence	239	3.66	.97	1	5
Volunteer Spirit	239	3.50	.88	1	5
Social Responsibility	239	3.99	.74	2	5
Democratic Value	239	4.04	.63	2	5
Human Rights Aware.	239	3.37	.85	1	5
Extroverted	239	3.74	.81	1	5
Compassionate	239	3.54	.77	1	5
Resilient	239	3.35	.94	2	5
Empathetic	239	4.03	.68	2	5
Academic Achievement	239	3.67	.72	1.75	5
Sports Engagement	239	3.42	1.00	1	5

Included in this analysis are variables that are related to charity, personal attributes, and demographics. When it comes to demographic information, participants' age, gender, socioeconomic status, family size, relationship with the family members, and the number of friends they have. For the charity-related variables, participants' experience of receiving help from others, their desire to give back to those who are in need, their volunteer spirit, having an admiring celebrity who is actively giving to charity, willingness to shoulder social responsibility, democratic value, and human rights awareness. Lastly, for personal attributes, participants' extroversion, compassion, resilience, empathy, sports engagement, and academic achievement were used.

Except for the percentage that participants were willing to donate if they have extra cash and their experience of receiving help from others, charity-related variables and personal attributes were all using 5-point Likert scale. To briefly describe the demographics of the participants, one can see that most of the participants were in their 20s. About 67% of them were female (SD = .47). On average, they had more than 3 members in their family including themselves (SD = 1.28). And they also responded that they have more than 7 friends they get along with (SD = 7.36).

3.3 Results

Table 2. Merged Questions

Variables	Question Items	*Cronbach's alpha*
Empathy	I get along with other people. I am always considerate of other people's feelings. I can sense what other people need when they don't say it.	.76
Democratic Value	I value democratic procedure when making decisions. I advocate democratic decision making in schools & elsewhere. I respect the decisions made by the majority votes. I respect the decision by majority votes despite my disagreement.	.83
Human Rights Awareness	I care about people suffering from social problem overseas. I hope to join the human rights promotion or charity efforts. It is important that everyone in the world thrives altogether.	.76
Extroverted	I'd rather be with other people than alone. I can greet strangers. I enjoy chattering with people around me. I can make friends with anyone.	.83
Compassion	I feel sorry for people in disadvantageous circumstances. I wish to help people who are suffering. I wish to console people who are upset or sad. I voluntarily help people in need.	.84
Resilience	I don't fear failure. Even if I stumble, I will spring back up. Even if I don't get the result I need, I will try again. Even if I don't get the result I need, I don't despair.	.91
	The government must spend more to help people in need.	.81

Variables	Question Items	*Cronbach's alpha*
Social Responsibility	There are many people who need help in our society. Corporates and organizations must do more to help people in need.	
Volunteer Spirit	I voluntarily participate in charity efforts. I enjoy helping others via volunteer service. I hope to spare more time to help people.	.87
Academic Achievement	I get good scores from school. I get good scores from school tests. I can understand new concepts with ease. I can complete challenging tasks with ease.	.85
Sports Engagement	I enjoy doing team sports or games. Team sports are more enjoyable than individual sports.	.77

Before diving into the analysis, the question items were tested and merged. Some of the variables (e.g., empathy, human rights awareness, and sports engagement fell slightly below the widely used alpha coefficient threshold of 0.80. But because the items in each variable shared more than 50% of covariance, they were deemed acceptable for merging.

Finding correlations of charity-related variables and personal attributes was one of the focal points of this research. It was found that the larger the family size, the more likely they were influenced by celebrities ($r = .32$, $p < .001$). People with a larger family size placed more value on democratic process ($r = .38$, $p < .001$). They were more extroverted ($r = .30$, $p < .001$), empathetic of others ($r = .47$, $p < .001$), and more likely to enjoy team sports ($r = .31$, $p < .001$).

Interesting information was drawn. those who have more friends were more likely to have donated to charity during the pandemic ($r = .33$, $p < .001$). And those who received help from others had a higher volunteering spirit ($r = .31$, $p < .001$), a higher volunteering spirit, ($r = .40$, $p < .001$), a higher human rights awareness ($r = .43$, $p < .001$), and were more extroverted ($r = .43$, $p < .001$).

Those who had an admiring celebrity who actively gives out to charity showed a higher sense of social responsibility ($r = .31$, $p < .001$), placed more value on the democratic process ($r = .34$, $p < .001$), were more empathetic of others ($r = .31$, $p < .001$), and were more actively engaged in sports activity ($r = .33$, $p < .001$).

Those who had a higher volunteering spirit exhibited a higher sense of social responsibility ($r = .49$, $p < .001$), placed more value on the democratic process ($r = .39$, $p < .001$), a higher human rights awareness ($r = .61$, $p < .001$), were more extroverted ($r = .40$, $p < .001$), were more compassionate ($r = .65$, $p < .001$), were more resilient ($r = .35$, $p < .001$), were more empathetic ($r = .31$, $p < .001$), and had a higher academic achievement ($r = .39$, $p < .001$).

Table 3 Pair-wise Correlation	Age	Gender	SES	Family Size	Family Relation.	# of Friends	Using META	COVID Donated	Received Help	% to Donate	Wish2Help	Celebrity Influence	Volunteer	Social Responsible	Democratic	Human Rights	Extrovert	Compass	Resilient	Empathy	Academic
GENDER	.02																				
SES	-.04	.03																			
Family Size	-.18**	.08	.00																		
Family Relation.	-.22***	.13*	.09	.09																	
# of Friends	-.19**	-.10	.22***	.07	.15*																
Using METAVERSE	-.04	-.13	.13*	.06	-.16*	.06															
COVID Donated	.03	.01	.27***	.10	-.06	.13*	.33***														
Received Help	-.13*	-.10	.08	.16*	.07	.12	.14	.10													
% to Donate	-.25***	-.02	.10	.10	.07	.14*	-.01	.15*	.11												
Wish to Help	-.07	.04	.03	.15*	.15*	.02	.10	.19**	.05	.24***											
Celebrity Influence	-.15*	.10	.08	.29***	.32***	.05	.06	.11	.13*	.11	.46***										
Volunteer Spirit	-.15*	-.05	.18**	.12	.17**	.09	.04	.27***	.11	.31***	.40***	.20**									
Social Responsibility	-.13*	.07	-.07	.16*	.28***	.01	-.02	.08	.08	.21***	.27***	.31***	.49***								
Democratic Value	-.14*	.04	.06	.11	.38***	.04	.01	.06	.12	.04	.25***	.34***	.39***	.49***							
Human Rights	-.18**	.01	.20**	.17**	.23***	.06	.10	.23***	.17**	.21**	.43***	.23***	.61***	.39***	.42***						
Extroverted	-.09	-.07	.18	.08	.30***	.16*	.07	.13	.12	.17**	.21**	.18**	.40***	.36***	.48***	.45***					
Compassionate	-.07	.02	.10	.14*	.25***	.11	.07	.23***	.09	.27***	.43***	.29***	.65***	.48***	.38***	.57***	.51***				
Resilience	-.10	-.09	.25	-.03	.24***	.15*	.05	.20**	.09	.23***	.19**	.02	.35***	.18**	.32***	.45***	.47***	.36***			=
Empathy	-.20**	.09	.19	.10	.47***	.16*	-.08	.00	.16*	.07	.23***	.31***	.36***	.42***	.66***	.40***	.58***	.51***	.43***		
Academic	-.06	-.04	.22	.01	.24***	.11	.12	.20**	.11	.21**	.17**	.09	.39***	.31***	.45***	.33***	.38***	.43***	.51***	.46***	
Sports Engagement	-.19**	-.09	.04	.17**	.31***	.21***	.04	.08	.11	.08	.27***	.33***	.22***	.28***	.36***	.27***	.46***	.27***	.19**	.41***	.20***

Note: * $p < .05$ ** $p < .01$ *** $p < .001$

Those who had a higher sense of responsibility placed more value on the democratic process ($r = .49$, $p < .001$), a higher human rights awareness ($r = .39$, $p < .001$), were more extroverted ($r = .36$, $p < .001$), were more compassionate ($r = .48$, $p < .001$), were more empathetic of others, ($r = .42$, $p < .001$), and a higher academic achievement ($r = .31$, $p < .001$).

Those who placed more value on the democratic process showed a higher human rights awareness (r = .42, $p < .001$), were more extroverted ($r = .48$, $p < .001$), were more compassionate, ($r = .38$, $p < .001$), were more resilient ($r = .32$, $p < .001$), were more empathetic of others ($r = .66$, $p < .001$), a higher academic achievement ($r = .45$, $p < .001$), and more active sports engagement ($r = .36$, $p < .001$).

Those who had a higher human rights awareness were more extroverted ($r = .45$, $p < .001$), more compassionate ($r = .57$, $p < .001$), more resilient ($r = .45$, $p < .001$), more empathetic ($r = .40$, $p < .001$), had a higher academic achievement ($r = .33$, $p < .001$).

Those who were more extroverted were also more compassionate ($r = .51$, $p < .001$), more resilient ($r = .47$, $p < .001$), more empathetic ($r = .58$, $p < .001$), had a higher academic achievement ($r = .38$, $p < .001$), and more active sports engagement ($r = .46$, $p < .001$)

Those who were more compassionate of others showed a higher resilience (r = .36, $p < .001$), more empathy (r = .58, $p < .001$), and higher academic achievement ($r = .43$, $p < .001$).

Those who were more resilient were more empathetic of others ($r = .43$, $p < .001$) and had a higher academic achievement ($r = .51$, $p < .001$).

Those who were more empathetic had a higher academic achievement ($r = .46$, $p < .001$) and more active sports engagement ($r = .41$, $p < .001$).

Table 4. Independent sample *t*-test by Using Metaverse (*Assumed Equal Variance*)

		Not Using (n = 139)	Metaverse (n = 100)	Mean Difference	t	p-value
Gender	*Mean (SD)*	.72 (.04)	.60 (.05)	.12	1.94	.053
SES	*Mean (SD)*	5.09 (.15)	5.55 (.17)	-.46	-2.02	.044
Family Relationship	*Mean (SD)*	4.01 (.07)	3.71 (.10)	.30	2.51	.012
Number of Friends	*Mean (SD)*	7.35 (.54)	8.20 (.86)	-.85	-.89	.377
Empathy	*Mean (SD)*	4.07 (.06)	3.97 (.07)	.11	1.21	.227
Extroverted	*Mean (SD)*	3.69 (.06)	3.81 (.09)	-.12	-1.10	.274
Resilience	*Mean (SD*	3.31 (.08)	3.41 (.09)	-.10	-.80	.423
Social Responsibility	*Mean (SD*	4.00 (.06)	3.98 (.07)	.03	.29	.771
Volunteer Spirit	*Mean (SD*	3.47 (.07)	3.55 (.09)	-.07	-.62	.533

Academic Achievement	*Mean (SD*	3.60 (.06)	3.77 (.07)	-.17	-1.83	.069
Sports Involvement	*Mean (SD*	3.39 (.08)	3.46 (.11)	-.07	-.54	.588
Donation Experience	*Mean (SD)*	.69 (.04)	.74 (.04)	-.05	-.83	.408
Percent Willing to Donate	*Mean (SD)*	11.27 (1.34)	10.95 (1.44)	.32	.16	.874
Desire to Help	*Mean (SD)*	3.01 (.08)	3.20 (.10)	-.19	-1.50	.134
Received Help	*Mean (SD)*	.68 (.04)	.81 (.04)	-.13	-2.20	.028
Celebrity Influence	*Mean (SD)*	3.61 (.08)	3.73 (.10)	-.12	-.93	.352
Democratic Value	*Mean (SD)*	4.04 (.06)	4.05 (.06)	-.01	-.15	.882
Human Rights Awareness	*Mean (SD*	3.29 (.07)	3.47 (.08)	-.17	-1.55	.122
Donated during COVID19	*Mean (SD)*	.09 (.02)	.35 (.05)	-.26	-5.33	.000

Finally, an independent sample *t*-test was conducted to see the group difference. 100 people were active in the metaverse while 139 were not using the metaverse at all. Interestingly enough, people using metaverse had a slightly higher socioeconomic status ($t = -2.02$, $p = .044$). And these people who were not using metaverse had a better relationship with their family members ($t = 2.51$, $p = .012$). The people who are active in the metaverse were more likely to have received help from others ($t = -2.20$. $p = .028$). Finally, whether or not those who are active in metaverse have donated to others in need since the outbreak of COVID-19 showed that they were more likely to have helped others ($t = -5.33$, $p < .001$).

IV. CONCLUSION & DISCUSSION

It was posited that the fast shift to digital technology negatively affected charity culture since the outbreak of COVID-19. One of the focal points of this research was to identify variables that could best explain people's willingness to give to charity. First of all, people's experience of receiving help when they needed it is moderately associated with their willingness. So instead of educating people about the importance of charity, they need to experience what it is like to receive help from others. We can reasonably infer that people's sense of indebtedness fosters the willingness to give back to others later. Next, their charity willingness is associated with their sense of social responsibility. People who are more aware of social issues may be more willing to find solutions. Unlike other personal attributes, human rights awareness can be strengthened through education. This finding suggests that we must incorporate it into the school curriculum so that students can internalize human rights issues across the world.

When it comes to personal attributes, extroverted people are more likely to give to charity. Moreover, people who are compassionate are more willing to give to charity. Compassion is more of a personal attribute. It can also be fostered by parents who are actively engaged in charity work. One should note that human rights awareness is strongly

associated with willingness. Though moderate, resilience is linked to charity willingness. So is academic achievement. In future study, this correlation must be explored in depth to ascertain the causal linkage.

In the group difference, we found that people using metaverse have slightly higher socioeconomic status. Perhaps the existing metaverse service induces users' expenditure so people who have more to spend are more likely to use metaverse. Next, metaverse users were slightly less likely to have a close relationship with their family. Looking at this figure, one can reasonably infer that people who do not receive sufficient support from their family resort to the metaverse where they can act with masked identity or image. But the *t*-test result alone cannot be used to make a causal relationship, so one can explore this in future research. An unexpected result from our *t*-test was that people who are active in the metaverse have received help from others more so than those who don't use the metaverse. Is this because these people are more interactive and feel more comfortable giving help and receiving help? Lastly, the focal point of this research was that people who are active in the metaverse were much more likely to have donated money to others during the pandemic. It is entirely possible that those metaverse users have stayed connected to other individuals in the metaverse. This interaction may have informed them of other people's needs. Or metaverse offered a new channel through which people communicated their needs and exchanged help.

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