Factors Impacting the Use of Donation-Based Crowdfunding Platforms in Saudi Arabia: The Case of Ehsan Platform

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Abstract

This research investigates the factors influencing people's intentions to use donation-based crowdfunding platforms in Saudi Arabia, focusing on the Ehsan platform supervised by the Saudi Data and Artificial Intelligence Authority (SDAIA). Ehsan aims to ensure proper monetary distribution to genuinely needy individuals, thereby reducing financial fraud and corruption. For the platform's success, it is essential that citizens effectively utilize it. Employing the Unified Theory of Acceptance and Use of Technology, the study analyzes the determinants that influence intentions to use Ehsan and actual use behaviors. An empirical study was conducted with 224 Saudi citizens from various age groups, and the research model was validated using the Partial Least Squares (PLS) approach. Findings reveal that performance expectancy and facilitating conditions significantly impact intentions to use Ehsan, while effort expectancy and social influence do not. The results indicate a positive association between participants' intentions to use Ehsan and their actual usage. This study enhances the understanding of factors affecting donation-based crowdfunding platforms in Saudi Arabia and offers practical insights for platform developers and decision-makers to consider in their design and modifications.

Keywords: crowdfunding, donation-based crowdfunding, UTAUT, Ehsan platform, Saudi Arabia

Introduction

The Saudi Arabian government is enhancing its focus on its transformation toward e-government. Accordingly, implementing e-government technologies is the fundamental component of Saudi Vision 2030 (Grand & Wolff, 2022), which asserts that government sectors, programs, and projects should effectively and efficiently employ digital technologies (Grand & Wolff, 2022). Many ministries and agencies have begun to provide their services to citizens, residents, and businesses through online channels. For example, the Ministry of Interior launched Absher platform and Kollona Amn application. Absher offers multiple services, including the ability to apply for and renew passports, pay fines, and request Hajj permits (Algarni. Hanaa, 2020), whereas Kollona Amn is a crowdsourcing application that allows citizens and residents to report legal violations, such as traffic violations, extortion, threats, and electronic crimes (Raheel, n.d.). Additionally, the Ministry of Commerce and Investment launched Balagh App, which allows Saudi Arabian citizens to report commercial violations using their smartphones. Users can select the type of violation, attach images, and provide the store's name and location (Asharq Al Awsat, 2020).

Implementing digital transformation has the potential to substantially improve the performance of government sectors across many dimensions. For example, cost reduction is a significant result of digital transformation. Studies have demonstrated that utilizing new technologies has enabled governments around the globe to achieve an approximate annual savings of $100 million (Nadrah et al., 2021). Additionally, government services are now unceasingly available, resulting in an increased level of citizen satisfaction (Nadrah et al., 2021). Digital transformation could also substantially reduce financial corruption (Merhi, 2022).

Many nations globally encounter significant levels of perceived corruption, and corrupt activities are generally believed to represent a major obstacle to the overall public good (Merhi, 2018). Corruption negatively impacts investment, constrains economic growth, alters government spending priorities, typically undermines a nation's efforts to reduce poverty, and hinders progress in enhancing quality of life for poor populations (Mistry & Jalal, 2012).

In an effort to control financial fraud and corruption, the Saudi Data and Artificial Intelligence Authority (SDAIA) developed the Ehsan platform (Saudi Gazette, 2023). Ehsan is a donation-based crowdfunding platform that aims to facilitate the donation process for community members, ensuring that their donations are distributed through reliable official channels. Through the utilization of Ehsan, citizens are able to donate to a diverse range of individuals across various circumstances, encompassing social, educational, and health-related conditions (CGC, n.d.). Every impoverished case is anonymously presented on the platform, accompanied by a concise description of the circumstances, the required amount of money, and the amount of money that has been collected. Prior to

the development of Ehsan, financial aid and donations were not subject to government supervision and scrutiny; consequently, the distribution of monetary assistance was susceptible to manipulation and delivery to individuals who were not in poverty.

Furthermore, donation-based crowdfunding platforms foster a sense of community among donors and beneficiaries. Donors often feel a stronger connection to the causes they support, as they can interact directly with fundraisers and witness the impact of their contributions. This engagement enhances the overall donor experience and encourages continued participation in charitable giving (Um, 2024). Additionally, these platforms leverage information technology to streamline the fundraising process, reducing transaction costs and making it easier for fundraisers to reach a wider geographical audience (Muryani et al., 2023). Donation-based crowdfunding platforms also provide relevant and up-to-date information about causes, enabling donors to make informed decisions. This access helps build trust and confidence in the platforms. Moreover, these platforms allow individuals to contribute conveniently from their homes, covering a wide array of causes—from medical expenses to educational initiatives. This accessibility supports grassroots initiatives, driving social change and allowing smaller organizations to reach a global audience (Um, 2024).

Although Ehsan offer numerous advantages that enhance the efficiency and satisfaction for both government and citizens; however, it remains unclear whether citizens will utilize these services in their daily lives (Merhi, 2018). In other words, the existence of Ehsan does not ensure its use by citizens who intend to donate money. To achieve the maximum benefits of Ehsan, citizens must donate through the platform, which implies that the effectiveness and success of Ehsan are reliant on its utilization by individuals. Therefore, government decision-makers must understand the factors that could result in the use of the platform. To the best of the authors' knowledge, no studies have been conducted to investigate the factors that affect participation in donation-based crowdfunding platforms in relation to Ehsan in Saudi Arabia. The results of this study fill the literature gap by applying the unified theory of acceptance and use of technology (UTAUT) to address the following research question:

What factors influence donors' intentions to use donation-based crowdfunding platforms in Saudi Arabia?

The paper is organized as follows: Section 2 provides a brief background on crowdfunding and the UTAUT model. Section 3 explains the proposed research model and the related hypotheses. Section 4 offers the research methodology. Section 5 comprises data analysis and results. Section 6 delivers a discussion of the findings. Section 7 contains the conclusion as well as implications and future research suggestions

Literature Review

A. **Crowdfunding**

Crowdfunding has emerged as a popular method for financing ideas, businesses, and projects by gathering small amounts of funding from numerous individuals through online platforms. Defined as an open call for financial resources—either as donations or in exchange for future products or rewards—crowdfunding has captured the attention of both academics and practitioners due to its rapid growth and success across various endeavors (Kamarubahrin et al., 2023). This financing model plays a crucial role in the global shift toward a digital society, building on the age-old concept of pooling resources to achieve a shared objective through collective effort (Hooghiemstra & de Buysere, 2016).

One of the key advantages of crowdfunding is its ability to democratize access to funding. It enables individuals and organizations to connect directly with potential funders, bypassing traditional gatekeepers such as banks and venture capitalists. This direct interaction not only opens doors for innovative ideas but also allows for personalized engagement, as crowdfunding platforms often provide detailed information about projects, facilitating informed decision-making for funders (Kamarubahrin et al., 2023; Kamarudin et al., 2023). However, trust is a fundamental component of a successful crowdfunding ecosystem. Both the platforms and project creators must establish credibility with potential funders. Platforms are expected to offer reliable services—timely responses, accurate information, and user-friendly interfaces—while funders must trust that project creators will fulfill their promises. Building this trust is essential for fostering a supportive and effective crowdfunding environment (Kamarudin et al., 2023).

The success of a crowdfunding campaign hinges on various factors, including the project type, platform regulations, the organizer's reputation, and funders' willingness to invest. Research indicates that social media plays a significant role in campaign outcomes; a robust online network and regular updates enhance a campaign's visibility and credibility. This sense of community and confidence is vital in attracting and retaining funders (Piccinelli, 2024).

Crowdfunding can be categorized into several types based on the nature of funding: equity-based, debt-based, reward-based, and donation-based crowdfunding. In equity-based crowdfunding, investors buy shares in a company, entitling them to a portion of future revenues (Lee & Park, 2020). Conversely, debt-based crowdfunding involves entrepreneurs seeking loans without offering equity stakes (Hooghiemstra & de Buysere,

2016). Reward-based crowdfunding allows contributors to receive products or services in return for their support (Gazzaz, 2019), while donation-based crowdfunding does not promise any return, as contributors give without expectation of compensation (Lee & Park, 2020). Each type reflects varying levels of return expectations, highlighting the diverse motivations behind crowdfunding participation.

Despite its benefits, crowdfunding faces several challenges. The legal frameworks governing these platforms, especially for donation-based crowdfunding, are still developing and may not fully address the complexities between platforms, project creators, and donors (Kamarubahrin et al., 2023). Moreover, while crowdfunding presents opportunities, it does not guarantee success. Campaign organizers must strategically plan and execute their initiatives, utilizing effective communication, compelling storytelling, and engaging visuals to capture the interest of potential funders (Piccinelli, 2024).

B.   **Donation-Based Crowdfunding**

Donation-based crowdfunding refers to a form of internet-based fundraising where individuals contribute funds out of philanthropic motivations, without expecting monetary or material rewards in return (Yahya et al., 2023). In this model, supporters donate money to causes they believe in, prioritizing the support of these causes over any personal gain (Piccinelli, 2024). This approach combines traditional charitable giving with enhanced reach provided by information technology and crowdfunding platforms (Yahya et al., 2023).

The significance of donation-based crowdfunding is multifaceted. Firstly, it serves as a vital platform for individuals and organizations to raise funds for various philanthropic causes, including education projects, healthcare initiatives, and responses to natural disasters. This model allows non-profit organizations to broaden their reach and promote humanitarian activities through social media and online channels (Kamarudin et al., 2023). Additionally, it empowers individuals to engage in philanthropy more actively, democratizing the act of giving and making it more accessible and inclusive (Um, 2024).

The evolution of donation-based crowdfunding can be traced back to the rise of internet-based platforms and social media, which have facilitated the collection of donations from a vast audience (Kamarudin et al., 2023). While the precise origins of this model are not explicitly documented, it is clear that its popularity has surged alongside technological advancements and the proliferation of online fundraising platforms. In recent years, donation-based crowdfunding has gained significant momentum, particularly in response to emergencies like natural disasters. This method has proven effective in mobilizing aid quickly, as evidenced during the COVID-19 pandemic, which saw a notable increase in online fundraising activities, resulting in a surge in revenue for donation-based platforms (Lim & Wang, 2023). Such developments underscore the growing importance and impact of donation-based crowdfunding in addressing urgent social and humanitarian needs.

Research has identified key variables that differentiate donation-based crowdfunding from traditional donation environments. For instance, Chen et al. (2019) identified three key variables. First, most crowdfunding platforms rely on anonymous donations. Second, in contrast to traditional donations, multiple donors support recipients with whom they have no social contact and who may not even reside in the same region. Lastly, donation-based crowdfunding websites continually update a case's status to ensure that contributors remain informed and to confirm that it has been fully funded. These differences complicate the interpretation of individual donation behaviors.

Most existing research on donation-based crowdfunding has focused on the intentions, motivations, and behaviors of users. Given the reliance on technology in crowdfunding processes, several studies have investigated user behaviors and their intentions to engage with these platforms. For example, Kenang & Gosal (2021) conducted a study to investigate the factors influencing the online donation intention of Generation Y in donation-based crowdfunding in Indonesia intention. The research integrated the theory of planned behavior, social presence theory, and the theory of stimulus organism response SOR. The variables assessed in relation to these theories encompassed attitude, subjective norms, and perceived behavioral control, as outlined in the theory of planned behavior. Additionally, website quality, transaction convenience, and perceived credibility included components of the SOR theory. The authors argued that the theory of social presence was also employed due to the fact that the main difference between traditional donation projects and online charity projects is the social experience that is felt when donating. Face-to-face communication typically exhibits a strong social presence, whereas e-mails and paper-based letters tend to have a low social presence. The analysis of 118 respondents reveled that intention to donate was positively influenced by the social presence, website quality, and transaction convenience. On the other hand, attitudes, subjective norms, and perceived behavioral control did not have a significant impact on intention to donate in the context of donation-based crowdfunding.

Moreover, Jiao et al. (2021) conducted a study to explore the factors that influence Chinese individuals' intention to support online charitable crowdfunding projects, either by donating funds or spreading information about the projects. The self-determination theory and the social interaction model were used as theoretical frameworks

within the study. The results indicated that intrinsic motivations (e.g., a sense of belonging and the joy of giving) and social ties significantly influenced individuals' intention to support charitable crowdfunding. Meanwhile, extrinsic motivations, such as reputation and social influence, primarily drove their willingness to share information about the projects rather than intention to donate. The results also showed that financial constraints were negatively related to intention to donate.

The preceding discussion illustrates the factors underlying users' participation in donation-based crowdfunding platforms that were identified through the use of various theoretical frameworks across various nations, including China, and Indonesia. To investigate factors that influence Saudi citizens' participation in donation-based crowdfunding platforms, this study applied the UTAUT model which will be explained in the next section

C. **Unified Theory of Acceptance and Use of Technology**

The Unified Theory of Acceptance and Use of Technology (UTAUT) is a model designed to understand and predict individuals' acceptance and usage of technology. Developed in 2003 by Venkatesh, Morris, Davis, and Davis, the UTAUT integrates and extends several previous models, providing a comprehensive framework for analyzing user intentions toward information systems and their subsequent usage behavior (Oye et al., 2014; Yahya et al., 2023). This integration reflects an effort to create a more holistic understanding of technology adoption by encompassing the most relevant aspects of user behavior.

Central to the UTAUT model are key variables that significantly influence behavioral intentions and user behavior regarding technology adoption. These variables include Performance Expectancy, which pertains to the user's perception of how technology enhances their performance; Effort Expectancy, which addresses the perceived ease of use; Social Influence, which captures the impact of peers and social norms; and Facilitating Conditions, encompassing resources and support available to users. Together, these constructs form a robust framework that has been validated through research, indicating that the UTAUT model can explain approximately 70% of behavioral intentions and 50% of actual user behavior in technology adoption scenarios (Yahya et al., 2023).

The UTAUT was utilized in this study due to its comprehensive integration of eight theories that are relevant to the acceptance of technology. The theories that were reviewed prior to the construction of the UTAUT are the theory of reasoned action, a technology acceptance model, a motivational model, the theory of planned behavior, a combined theory of planned behavior and technology acceptance model, a model of personal computer use, the diffusion of innovations theory, and social cognitive theory (Lee & Park, 2020). The UTAUT is a unified model that incorporates four essential constructs for assessing users' adoption and use of new technologies: performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003).

Numerous studies have utilized the UTAUT to examine the acceptance and adoption of developing technologies among individuals in diverse contexts, including e-government, mobile banking, and digital learning (Venkatesh et al., 2016). With regard to donation-based crowdfunding, Li et al. (2018) applied the UTAUT model to identify the factors that affect donors' intention to participate in donation-based crowdfunding projects in China. Their research also incorporated two additional variables: a sense of trust and experience expectations. They collected data via an online survey of Chinese charity-based crowdfunding platform users, and structural equation modeling was utilized to analyze the data gathered from 316 participants. The results revealed that social influence, effort expectancy, a sense of trust, and performance expectancy positively influenced users' intention to donate to charitable crowdfunding projects. Although the impact of facilitating conditions and experience expectations was positive, it was not as substantial as other factors.

In a similar vein, Theerthaana & Manohar (2021) employed the UTAUT model to examine users' intention to use donation-based crowdfunding. The researchers also incorporated the behavioral finance theory in their study and focused on a sample of participants who resided in India and Bangladesh. The findings of the study demonstrated that performance expectancy, effort expectancy, facilitating conditions, and trust significantly increased users' intention to use donation crowdfunding. Furthermore, the researchers found that several types of bias, including overconfidence bias, herding bias, and regret aversion bias, had a moderating influence on the relationship between intention to donate and donation behavior.

Research Model and Hypotheses

The purpose of the current research was to explore the various factors that influence donors' intention to participate in donation-based crowdfunding platforms in Saudi Arabia. By drawing on the UTAUT model (see Fig. 1), five hypotheses were formulated. Four of the hypotheses concerned the determinants of the framework, namely performance expectancy, effort expectancy, social influence, and facilitating conditions. The last hypothesis examined the influence of individuals' intention to participate on their actual behavior.
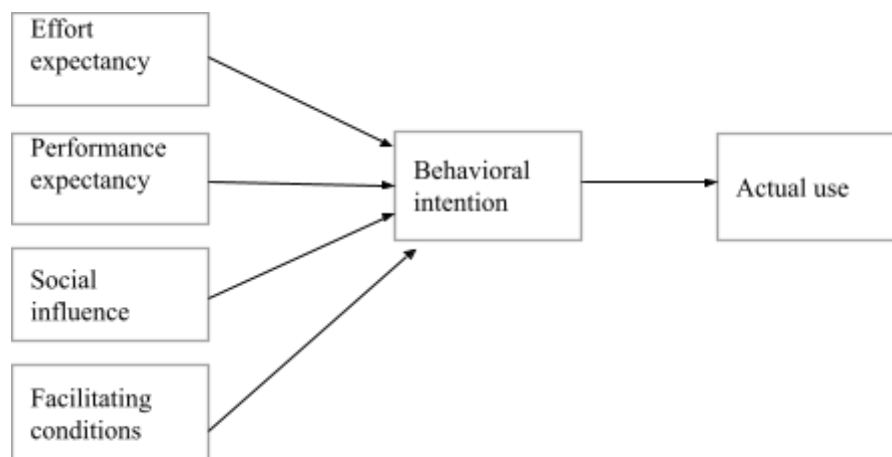
Figure 1. Proposed Model

A. Effort Expectancy (EF)

Within the UTAUT model, effort expectancy refers to an individual's assessment of the level of effort required to successfully accomplish a task utilizing a certain technology (Venkatesh et al., 2003). Davis (1989) assumed that individuals are more likely to adopt a novel technological innovation if they believe that the technology possesses a high degree of ease of use. Numerous studies have demonstrated that consumers' intention to utilize crowdfunding platforms is influenced by their anticipation of effort (Moon & Hwang, 2018; Sulaeman & Ninglasari, 2020). That is, the likelihood of adopting an innovative technology is higher when its utilization entails a reduced level of effort. Therefore, the first hypothesis was formulated as follows:

H1: Effort expectancy positively influences users' behavioral intention to use donation-based crowdfunding platforms.

B. Performance Expectancy (PE)

According to Almaiah et al. (2019), performance expectancy refers to the extent to which technology benefits the user when performing a specific activity. According to previous studies on acceptance (Lee & Park, 2020), they have indicated that performance expectancy is a stronger predictor of individuals' intention to utilize information technology (IT).

In this study, the definition of performance expectancy was derived from (Li et al., 2018). Li et al. (2018) was conducted to determine the factors that impact individuals' intention to donate to charitable crowdfunding projects in China. It defined performance expectancy as the extent to which a donor believes that utilizing charitable crowdfunding platforms for monetary donations will contribute to their own satisfaction and sense of achievement. The authors suggested that engagement in such initiatives leads to a sense of self-satisfaction among donors, which enhances their willingness to participate. Furthermore, they argued that donors' engagement in and donation to these platforms improve their sense of accomplishment. Their study revealed that performance expectancy significantly affects users' intention to donate. Based on the previous discussion, the second hypothesis was worded as follows:

H2: Performance expectancy positively influences users' behavioral intention to use donation-based crowdfunding platforms.

C. Social Influnce (SI)

Venkatesh et al. (2003) defined social influence as "the degree to which an individual perceives that important others believe she or he should use the new system." Prior research has claimed that social factors, including social networks and peer effects, have a significant effect on individuals (Moon & Hwang, 2018). In other words, social influence plays a crucial role in shaping individual behavior.

Regarding non-profit donations, Li et al. (2018) stated that donating behavior is influenced by peer pressure; that is, individuals' willingness to contribute to charity depends on the actions of those who surround them. Furthermore, Jiao et al. (2021) indicated that social pressure and adherence to social norms increase the likelihood that individuals will be motivated to support charitable crowdfunding projects when approached by friends in their own social networks. Accordingly, it was assumed in the current study that social influence significantly influences intention to use donation-based crowdfunding platforms. Hence, the third hypothesis was formulated as follows:

H3: Social influence positively influences users' behavioral intention to use donation-based crowdfunding platforms.

D. Facilitating Conditions (FC)

Facilitating conditions refer to the level of an individual's belief in the existence of organizations and technical infrastructure to facilitate the utilization of the system (Lee & Park, 2020). Thus, individuals who possess the necessary knowledge and sufficient resources can effectively operate any given system (Theerthaana & Manohar, 2021). In essence, possessing a smartphone or a computer, an internet connection, and fundamental computing proficiency improves an individual's ability to embrace innovative technological advancements. Moreover, an individual's perception of infrastructure availability positively influences their intention to adopt a technology (Oliveira et al., 2016).

In the context of online donations, Kasri & Sosianti (2023) employed the UTAUT to analyze the factors that influence Muslims users' intention to engage in online *zakat* payments in Indonesia. The results indicated that facilitating conditions influenced participants' intention to perform such payments. According to S. Sulaeman (2020), online *zakat* initiatives can be classified as donation-based crowdfunding platforms. Therefore, the same argument about the impact of the facilitating conditions on intention to donate is made in this study as in (Kasri & Sosianti, 2023), and the fourth hypothesis was formulated as follows:

H4: Facilitating conditions positively influence users' behavioral intention to use donation-based crowdfunding platforms.

E. Behavioral Intention (BI)

Behavioral intention refers to the extent to which users express a willingness or unwillingness to engage in a specific activity (Almaiah et al., 2019). Behavioral intention is frequently utilized in technology acceptance models as an indicator of an individual's intention to use a certain technology (Khizar & Siddiqui, 2021). Previous studies have revealed that behavioral intention significantly influences the actual use of technology (Khan et al., 2022).

In terms of donation behavior, Kashif et al. (2015) revealed a positive correlation between intention to donate and subsequent behavior and indicated the significant impact of the former on the latter. Therefore, a fifth and last hypothesis was developed:

H5: Users' behavioral intention to use donation-based crowdfunding platforms positively influences their actual behavior.

Research Methodology

A. Sample and Data Collection

The objective of this study was to examine the factors that influence the utilization of donation-based crowdfunding platforms through the UTAUT model. To test the proposed hypotheses, a sample of Saudi citizens who were either current or prospective users of the Ehsan platform were recruited. Moreover, participants had to be 18 years or older because it was assumed that they would have the financial capability to donate on the Ehsan platform. Data was gathered through a closed-ended, structured questionnaire. Two steps were taken to ensure the accuracy and comprehensibility of the questionnaire. First, given that the recipients' primary native language was Arabic, the survey was translated from English into Arabic. Then, it underwent a review process by three translation experts to ascertain consistency and alignment between the Arabic and English versions.

The questionnaire was constructed using SurveyMonkey, then disseminated through various online channels (e.g., email and WhatsApp). Moreover, pilot testing was completed by 27 random recipients before the actual distribution of the survey. According to Van Teijlingen & Hundley (2002), conducting a pilot study is an essential component of a well-designed survey and enhances its reliability and validity. Pilot testing aims to identify potential issues and challenges with the research instrument and methodology prior to the initiation of the primary study. After the pilot study, the survey was disseminated to a sample size of approximately 600 individuals, which resulted in the collection of 280 responses. After conducting data cleaning procedures, a total of 224 responses were deemed suitable for analysis.

The questionnaire was structured as follows. The first section encompassed the participants' demographic data, including their age, gender, and level of education. Table 1 and Figures (2-4) show the participants' demographic information.

Table1. Respondents' Demographic Information ($N = 224$)

Variables	Value	Frequency	Percentage
Age	18–24	25	11.2%
	25–34	52	23.2%
	35–54	116	51.8%
	Over 45	31	13.8%
Gender	Male	99	44.2%
	Female	125	55.8%
Educational level	High school	39	17.4%
	Bachelor	140	62.5%
	Master	37	16.5%
	PhD	3	1.3%
	Other	5	2.2%

The following sections were related to the measurement items for the study. The survey contained a total of 19 questions, as indicated in Table 2. Items in the questionnaire were assessed using a five-point Likert scale, with a score of 1 representing strong disagreement and a score of 5 demonstrating strong agreement.

Table 2. Measurement Items

Construct	Items	Adopted from
Effort expectancy (EE)	EE1: I find the Ehsan platform easy to use for donating. EE2: My interaction with the Ehsan platform is clear and understandable. EE3: The Ehsan platform's user interface is easy to understand. EE4: It is easy for me to learn how to use the Ehsan platform.	(Venkatesh et al., 2003) and (Khizar & Siddiqui, 2021)
Performance expectancy (PE)	PE1: I feel satisfied after donating through Ehsan platform. PE2: Helping others by donating through the Ehsan platform brings me a sense of accomplishment.	(Li et al., 2018)
Social influence (SI)	SI1: People around me encourage me to donate through the Ehsan platform. SI2: People who are important to me think that I should donate through the Ehsan platform. SI3: People whose opinions I value advise me to donate through the Ehsan platform.	(Venkatesh et al., 2003) and (Khizar & Siddiqui, 2021)
Facilitating conditions (FC)	FC1: I have the necessary resources to use the Ehsan platform (e.g., an internet connection and a computer, tablet, or smartphone). FC2: I have the basic computer knowledge needed to use the Ehsan platform. FC3: I can get assistance from others when I have difficulties using the Ehsan platform FC4: I can donate through the Ehsan platform using a variety of devices, such as a laptop or a mobile phone.	(Venkatesh et al., 2003)
Behavioral intention (BI)	BI1: I intend to donate through the Ehsan platform in the near future. BI2: I predict that I will donate through the Ehsan platform in the coming period. BI3: I plan to help those in need by donating through the Ehsan platform in the future. BI4: I will try to donate through the Ehsan platform in the near future.	(Venkatesh et al., 2003)
Actual use (AU)	AU1: I donate through the Ehsan platform. AU2: I browse the Ehsan platform and provide financial support to people in need.	(Khizar & Siddiqui, 2021)

B. Data Analysis Procedures

The collected data were analyzed using the partial least squares (PLS) method. PLS path modeling is a variance-based technique within the framework of structural equation modeling (SEM). It is extensively utilized across various research domains, including business and social research, due to its ability to effectively model composites and factors (Rönkkö & Evermann, 2013). Furthermore, PLS can be used to evaluate the validity and reliability of research models and is useful in hypothesis testing, particularly in studies with limited sample sizes (Henseler, 2017). These features make PLS appropriate for examining user engagement and the adoption of a specific technology, namely the Ehsan platform, in the context of this research.

The analysis was conducted using SmartPLS (version 4.0.9.6 for macOS) and was performed in two stages. The initial assessment of convergent and discriminant validity involved the testing of the measurement model, followed by the evaluation of the structural model to examine the proposed hypotheses.

Data Analysis and Results

A. Measurement Model

In this step, an assessment was undertaken to determine the reliability and validity of the measurement model. Its reliability was evaluated using Cronbach's alpha and composite reliability (CR), while its validity was assessed through convergent validity and discriminant validity. As shown in Table 3, 18 out of 19 items exhibited loading factors that surpassed the threshold of 0.7. The only exception was facilitating conditions, which demonstrated a loading factor of 0.62. However, it should be noted that this value still exceeds the minimum acceptable value of 0.5 (Hair Jr et al., 2014).

With regard to Cronbach's alpha and CR, it is recommended that both values exceed 0.70 to ensure an adequate level of reliability (Kashif et al., 2015; Van Teijlingen & Hundley, 2002). Table 3 illustrates values for Cronbach's alpha and CR; it indicates that the above condition was fulfilled, as both constructs exhibited values over 0.7 (and thus an appropriate level of internal consistency).

In addition, Table 3 shows average variance extracted (AVE) values for all constructs, which is a metric for evaluating convergent validity. Convergent validity refers to the extent to which two distinct measures effectively capture and assess the same construct (Rönkkö & Evermann, 2013). To fulfill the criterion of convergent validity, the AVE value must exceed 0.5 (Hair et al., 2012). According to Table 3, all constructs fell within the range of 0.593 to 0.877. This indicates that the requirement of convergent validity was satisfied.

Table 3. The Measurement Model Statistics

Variable	Items	Loading	Cronbach's alpha	Composite reliability	AVE
EE	EE1	0.868	0.884	0.920	0.741
	EE2	0.865			
	EE3	0.868			
	EE4	0.844			
PE	PE1	0.926	0.860	0.934	0.877
	PE2	0.946			
SI	SI1	0.787	0.869	0.920	0.793
	SI2	0.934			
	SI3	0.942			
FC	FC1	0.837	0.767	0.852	0.593
	FC2	0.796			
	FC3	0.620			
	FC4	0.808			
BI	BI1	0.926	0.948	0.962	0.864
	BI2	0.941			
	BI3	0.926			
	BI4	0.926			
AU	AU1	0.931	0.818	0.916	0.846
	AU2	0.908			

Discriminant validity refers to the extent to which two distinct constructs are not related to each other (Rönkkö & Cho, 2022). In this study, the assessment of discriminant validity was through the utilization of the square root of AVE and the examination of cross-loadings. To assess the validity of the measurement model, it was imperative

to ensure that the square root of AVE for each construct exceeded its highest correlation with any other construct. Table 4 shows the square root of AVE for all constructs and reveals that these values for each construct were greater than their correlations with other constructs.

Table 4. Discriminant Validity

Variables	AU	BI	EE	FC	PE	SI
AU	**0.920**					
BI	0.712	**0.930**				
EE	0.490	0.511	**0.861**			
FC	0.372	0.536	0.617	**0.770**		
PE	0.565	0.575	0.498	0.396	**0.936**	
SI	0.369	0.383	0.353	0.183	0.526	**0.891**

With regard to the criteria of cross-loading, it is essential that a particular item demonstrates higher loadings on its perspective construct compared its loading on other constructs that are being addressed in the study (Rönkkö & Cho, 2022). The values of the cross-factor for all items are presented in Table 5, which confirms that the requirement of cross-loading was met.

Table 5. Cross Loading

Variables	AU	BI	EE	FC	PE	SI
AU1	**0.931**	0.697	0.463	0.371	0.536	0.378
AU2	**0.908**	0.608	0.438	0.310	0.502	0.297
BI1	0.656	**0.926**	0.473	0.490	0.576	0.400
BI2	0.643	**0.941**	0.444	0.473	0.531	0.357
BI3	0.663	**0.926**	0.491	0.521	0.513	0.373
BI4	0.685	**0.926**	0.490	0.509	0.519	0.294
EE1	0.441	0.417	**0.868**	0.543	0.437	0.297
EE2	0.421	0.447	**0.865**	0.463	0.435	0.348
EE3	0.411	0.433	**0.868**	0.528	0.457	0.324
EE4	0.417	0.459	**0.844**	0.588	0.386	0.248
FC1	0.423	0.486	0.537	**0.837**	0.348	0.111
FC2	0.214	0.378	0.406	**0.796**	0.187	0.024
FC3	0.193	0.332	0.445	**0.620**	0.292	0.284
FC4	0.276	0.434	0.502	**0.808**	0.376	0.169
BE1	0.530	0.495	0.462	0.363	**0.926**	0.447
BE2	0.529	0.577	0.471	0.377	**0.946**	0.533
SI1	0.240	0.260	0.330	0.136	0.430	**0.787**
SI2	0.332	0.343	0.311	0.183	0.499	**0.934**
SI3	0.392	0.402	0.315	0.167	0.480	**0.942**

After evaluating the reliability and validity of the measurement model, the next step was to assess the structural model; the results are presented in the following section.

B. Structural Model

This step was performed to assess the relationship between variables and evaluate the structural model's predictive capabilities. The evaluation of the structural model was primarily based on the significance of the path

coefficients and the R^2 value. The PLS analysis involved a bootstrapping procedure with a sample size of 5,000. It was conducted to assess the structural model and determine the path coefficients and their corresponding levels of significance.

Table 6 demonstrates that three out of five hypotheses were supported, while the two remaining hypotheses were not supported. The results indicate a significant positive relationship between performance expectancy and behavioral intention (β = 0.339, T = 4.243, p < 0.001). Similarly, a significant positive relationship was observed between facilitating conditions and behavioral intention (β = 0.314, T = 0.070, p < 0.001). Moreover, the analysis revealed that behavioral intention significantly influenced actual use (β = 0.712, T = 19,225, p < 0.001). On the other hand, a significant relationship was not found between effort expectancy and behavioral intention (β = 0.110, T = 1.484, p = 0.138), nor social influence and behavioral intention (β = 0.109, T = 1.712, p = 0.087).

Table 6 Hypothesis Testing Results

To assess the predictive power of the model, the R^2 value was also examined. R^2 is a statistical measure that

H	Hypotheses	Std. beta	Std. error	*T*-values	*P*-values	Result
1	Effort Expectancy ☐ Behavioral Intention	0.110	0.074	1.484	0.138	Not supported
2	Performance Expectancy ☐ Behavioral Intention	0.339	0.080	4.243	0.000	Supported
3	Social Influence ☐ Behavioral Intention	0.109	0.064	1.712	0.087	Not supported
4	Facilitating Conditions ☐ Behavioral Intention	0.314	0.070	4.489	0.000	Supported
5	Behavioral Intention ☐ Actual Use	0.712	0.037	19.225	0.000	Supported

indicates how much variation in the dependent variable can be explained by the independent variables (Jöreskog, 1999). In general, the model exhibited a predictive ability of 50.7% in explaining the variability of actual behavior, as indicated by an R^2 value of .507. Additionally, the factors of effort expectancy, performance expectancy, social influence, and facilitating conditions were found to account for 46.1% of the variance in behavioral intention (R^2 = .461). The results are summarized in Figure 2.

Discussion

The purpose of this study was to examine the determinants that influence the use of crowdfunding applications in Saudi Arabia, with a focus on the Ehsan platform. This investigation was conducted by applying the UTAUT framework. The findings of this study provide valuable insights into the factors that influence Saudi citizens' intentions to utilize the Ehsan donation-based crowdfunding platform. By applying the Unified Theory of Acceptance and Use of Technology (UTAUT) model, the research has uncovered several important determinants of behavioral intention and actual use of the Ehsan platform.

After collecting and analyzing the data, the results showed that performance expectancy significantly influenced users' intention to donate through the Ehsan platform. This finding is in line with research conducted by Li et al. (2018), which indicated that individuals intend to use donation-based crowdfunding platforms due to a feeling of self-satisfaction and a sense of achievement that they derive from making donations. The results suggest that Saudi citizens are more likely to donate through the Ehsan platform if they believe that it will enhance their sense of satisfaction and accomplishment. This finding highlights the importance of designing the platform in a way that maximizes the donors' perceived benefits and increases their feelings of self-fulfillment.
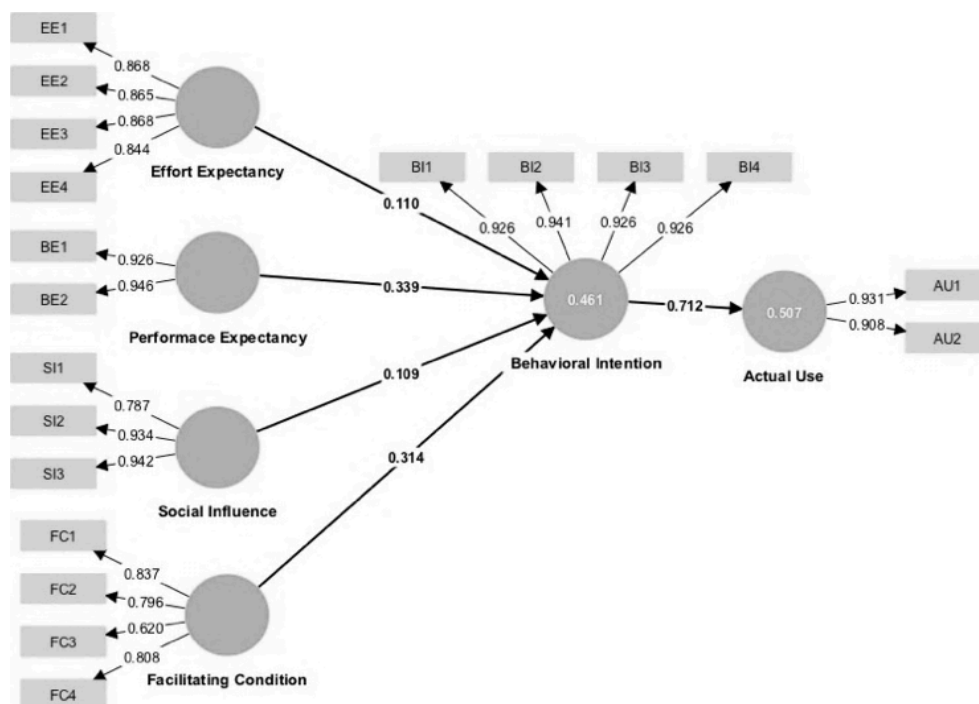
Figure 5. Results of the Empirical Study

In addition, the analysis demonstrated a positive relationship between facilitating conditions and intention to utilize the Ehsan platform. Facilitating conditions encompass essential knowledge and resources, along with the availability of assistance in using the platform when needed. This finding aligns with the results presented by Sulaeman & Ninglasari (2020), as they established a positive association between facilitating conditions and intention to use donation-based crowdfunding platforms. The findings from this research also align with (Kasri & Sosianti, 2023) regarding the influence of effort expectancy on intention to donate to crowdfunding platforms, and the significance of technical infrastructure, resources, and support in shaping individuals' adoption of online donation platforms. These studies concluded that there was not a statistically significant association between effort expectancy and intention to use crowdfunding applications. The implication is that the Saudi government and the platform developers should ensure that the necessary technical and organizational resources are in place to enable users to navigate and utilize the Ehsan platform effectively.

Contrary to the proposed hypotheses, the study did not find a significant relationship between effort expectancy and behavioral intention, nor between social influence and behavioral intention (Almaiah et al., 2019; Sulaeman & Ninglasari, 2020). This suggests that the perceived ease of use and the influence of social networks may not be the primary drivers of Saudi citizens' intentions to donate through the Ehsan platform. These results diverge from some previous studies on crowdfunding and online donation behavior, which have highlighted the importance of these factors (Jiao et al., 2021; Oye et al., 2014). The lack of significance may be attributed to the specific context of the Ehsan platform, where the ease of use and social influence may be less salient in comparison to the perceived performance benefits and availability of facilitating conditions.

The study also revealed a strong positive relationship between users' behavioral intention and their actual use of the Ehsan platform (Kashif et al., 2015; Khan et al., 2022). This finding is consistent with previous research on the link between intention and behavior in the context of charitable giving and crowdfunding (Van Teijlingen & Hundley, 2002). It suggests that fostering positive intentions among Saudi citizens is a crucial step in promoting the actual utilization of the Ehsan platform for charitable donations.

The theoretical contribution of this study lies in its application of the UTAUT model to the context of donation-based crowdfunding platforms in Saudi Arabia, which has not been extensively explored in the literature (Davis, 1989; Theerthaana & Manohar, 2021). By identifying the key determinants of behavioral intention and actual use, the research enhances the understanding of the factors that drive the adoption of such platforms in the Saudi Arabian context.

From a practical standpoint, the findings offer valuable insights for the platform developers and policymakers responsible for the Ehsan platform. The results highlight the importance of focusing on the performance-related benefits and the availability of technical and organizational resources to encourage the platform's utilization.

Platform designers should prioritize features and functionalities that enhance the donors' sense of satisfaction and accomplishment, as well as ensure the provision of a user-friendly interface and reliable technical support.

Additionally, the insights from this study can inform the development and promotion of other e-government services and digital philanthropic initiatives in Saudi Arabia, as the country continues to drive its digital transformation agenda (Algarni. Hanaa, 2020; Grand & Wolff, 2022; Merhi, 2018). By understanding the factors that influence the adoption and use of platforms like Ehsan, policymakers can tailor their strategies to better meet the needs and expectations of Saudi citizens.

Conclusion

This study investigated the factors that influence Saudi citizens' intentions to utilize the Ehsan donation-based crowdfunding platform, which was developed by the Saudi Data and Artificial Intelligence Authority (SDAIA) to facilitate transparent and reliable charitable giving. By applying the Unified Theory of Acceptance and Use of Technology (UTAUT) model, the research identified key determinants of behavioral intention and actual use of the Ehsan platform.

The UTAUT was employed in this study to investigate the factors that influence intention to use the Ehsan platform in Saudi Arabia. Data were obtained from a sample of 224 individuals who are citizens of Saudi Arabia through the administration of an online questionnaire. Subsequently, the data were analyzed utilizing the PLS method.

The findings revealed that performance expectancy and facilitating conditions significantly influence users' intentions to donate through the Ehsan platform. This suggests that Saudi citizens are more likely to engage with the platform if they believe it will enhance their sense of satisfaction and accomplishment, and if the necessary technical resources and support are readily available. Conversely, effort expectancy and social influence did not have a significant impact on behavioral intention, indicating that the perceived ease of use and the influence of social networks may not be the primary drivers of platform adoption in this context.

Importantly, the study also found a strong positive relationship between users' behavioral intention and their actual use of the Ehsan platform. This demonstrates the critical role of fostering positive intentions among Saudi citizens in promoting the platform's utilization and the realization of its potential benefits.

The theoretical contribution of this study lies in its application of the UTAUT model to the context of donation-based crowdfunding platforms in Saudi Arabia, which has not been extensively explored in the literature. By identifying the key determinants of behavioral intention and actual use, the research enhances the understanding of the factors that drive the adoption of such platforms in the Saudi Arabian context. The results highlight the importance of focusing on the performance-related benefits and the availability of technical and organizational resources to encourage the platform's utilization. Platform designers should prioritize features and functionalities that enhance the donors' sense of satisfaction and accomplishment, as well as ensure the provision of a user-friendly interface and reliable technical support.

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A. Practical and Theoritcal Implications

The findings presented in this paper shed the light on several practical implications. First, intention to donate to the Ehsan platform could be potentially enhanced through the development of a mobile application. This is supported by the finding that facilitating conditions positive influence donation intention. Mobile applications provide a convenient means for mobile users to engage in charitable donations, as they offer accessibility, portability, and constant availability. Second, the findings demonstrated that performance expectancy, which encompasses donors' feelings of self-satisfaction and a sense of achievement following their use of the Ehsan platform, has a positive impact on their intention to participate in further donations. These emotions could be amplified by having the platform send a message to donors to express gratitude and recognition for their contributions.

This study represents one of the first attempts to apply the UTAUT framework in the context of donation-based crowdfunding in Saudi Arabia, as there is a scarcity of research conducted on this particular topic. This study also provides empirical findings on the factors that influence the intention to donate through the Ehsan platform, as well as the positive impact of this intention on actual donating behavior. These findings establish a basis for future researchers to look into deep understandings regarding the use of donation-based crowdfunding among Saudi citizens.

B. Limitations and Future Research

This research reveals that facilitating conditions and performance expectancy influence intention to use the Ehsan platform, while social influence and effort expectancy do not. Like all research, this study has certain limitations that should be acknowledged. First, only a quantitative methodology was used, which prevents a comprehensive understanding of donors' utilization of the Ehsan platform. The inability to conduct comprehensive research utilizing a mixed-methods approach was attributable to constraints with both time and resources. Second, it is important to acknowledge that the conclusions and findings from this study are limited to the context of donation-based crowdfunding applications. Consequently, they may lack generalizability to alternative forms of crowdfunding, such as reward-based, equity-based, and debt-based crowdfunding. Thus, future research should focus on intention to participate in such crowdfunding platforms. Additionally, future research should examine donation intention by incorporating factors such as social responsibility, perceived trust, and intrinsic and extrinsic motivations.

Conflicts of Interest

The authors declare no conflict of interest.

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