Identifying the Factors Influencing Information Usefulness and Information Adoption in Promoting Organ Donation through Social Media

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ABSTRACT

The effectiveness of social media in the context of organ donation is uncertain because of the mixed findings reported in the literature. Hence, this paper aims to review the literature and to identify the factors in social media that can influence one's decision to register as an organ donor. Most of the earlier studies focused on examining the attitude and knowledge of people toward organ donation after an exposure to social media. However, not many studies look into the impact of message framing towards adoption of information through social media platform. Review from the past studies reveals that information quality, information credibility, visual information, and accessibility information are the possible predictors towards information usefulness in the context organ donation. In the meantime, we propose that information usefulness to have a positive association towards information adoption which will lead to the intention to register as organ donors. A research model is proposed in this study which includes all the variables that are discussed in this paper.

Keywords: social media; organ donation; information usefulness; information adoption; social marketing.

1.0 INTRODUCTION

In the history of organ donation in Malaysia, organ transplantation has begun since 1970s but the organ donation campaigns are only actively started in 1997 [1]. So far, the total number of organ pledgers in Malaysia since 1997 was 401,242 which comprised only 1.35% of Malaysian population [2]. In order to increase the total organ donors in Malaysia, the Ministry of Health Malaysia has launched the Organ Donation Strategic Campaign Plan in 2012. There are six strategies in the campaign including using mass media and social media to disseminate information in order to increase awareness on organ donation [2]. The role of social media in disseminating information on organ donation is imperative as discussed by previous researchers as it helps in creating awareness [3, 4]. Surprisingly, even though social media have been fully-utilized to promote organ donation, Malaysia is still among the countries with the lowest rate of organ donation [5].

The Ministry of Health Malaysia has been using Facebook, Twitter, Instagram and YouTube as their official social media to promote organ donation and to encourage individuals to register as organ pledgers. Nevertheless, the current number of followers and subscribers of social media used by Ministry of Health Malaysia to promote organ donations is still small. Statistics show in September 2018, there are 32,234 Facebook likers, 7,569 Twitter followers, 2,532 Instagram followers and 100 YouTube subscribers for Derma Organ. Apparently, there were about 21.9 million social media users in 2016 and it shows an increase compared to 2015 which is 2.4% [6]. Furthermore, Yusop and Sumari [7] stated that 88% of Malaysian youth are actively engaged in using social media platform. Based on the statistics, this indicates that the number of likers or followers of social media sites promoting organ donation is relatively small compared to the total of internet users in Malaysia.

Therefore, based on the above-mentioned phenomenon, this paper aims to critically review the existing literature to find the key issues which are related to the information adoption of social media. The output of this review is used as our basis to develop a conceptual model to explain the relationships among proposed predictors towards the information usefulness and adoption which will generate intention to register as organ donors.

2.0 LITERATURE REVIEW

In these recent years, social media have become the best tool for non-profit organizations to promote their causes [8]. The role of social media in a non-profit organization is generally to provide a medium to spread information, gain support and build trust [9]. In addition, social media also helps marketers in these non-profit organizations to break clutters in order to compete with larger and higher budget advertisement from other organizations due to its ability to reach broader populations at lower cost [10]. Moreover, social media enable social marketers to integrate the elements of marketing techniques in promoting changes in attitude and behaviour [11].

Past studies on the use of social media by non-profit organizations are mostly discuss on the effectiveness of social media in non-profit context [12, 13], social media's impact on non-profit brand engagement [14], the adoption of social media in management of non-profit organization [15, 16, 17, 18], the social media as the platform for voicing the opinion to make a change or create advocacy [8, 19], effectiveness in area of public engagement between non-profit organization and target segment of people by spreading information, hashtag and dialog [20, 21, 22, 24], promoting the agenda of non-profit organizations [25], enhancing the motivations to participate in the activities that are under the spectrum of non-profit organizations [26] and also building and increasing the levels of relationships between consumers and non-profit organizations by embracing the tool of social media [27].

Meanwhile, in the context of organ donation and social media, literature review demonstrates that the past studies focus on the impact of information from social media toward knowledge and attitudes of organ donation [28, 29, 30], the effect of social media towards public opinion on organ donation registration [31], examining the theory of cultural carrying capacity [32], testing the effect of social media towards the intention to register as organ donors [33], the Facebook effect towards organ donor registration [34,35], impact of social media towards university students in organ donation registration [36], responses among the audiences towards organ donation video using social media platforms [37, 38], the used of social media by hospitals in promoting organ donation [39], understanding how the social media is able to affect the society towards registering as organ donors [40], examining how opinion leaders post about organ donation on social media platforms [41], effects on promoting ethical dimensions through social media [42] and exploring the public discourse toward organ donation [43]. Based on the above-mentioned past studies, hence, we found that there is a gap in the literature which failed to discuss on the message framing used in the social media to promote organ donation.

The effectiveness of social media in the area of non-profit organizations is vastly discussed in the literature for its ability to change the behaviour of consumers or individuals to a positive direction which is by sharing meaningful information that creates awareness on certain issues [44]. Apart from that, past studies have also highlighted the nature of social media which is low cost which makes them a favourable tool to non-profit organizations [45]. Furthermore, the ultimate benefit to non-profit organizations in using social media is the ability to communicate effectively with their target segments [46]. However, the task to embrace social media by non-profit organization is challenging because the public do not trust the information providers [20]. This has resulted the organizations to become scepticism with the ability of social media to assist them to achieve their goals [47].

2.1   *Information Quality*

Numerous researchers discussed the importance of information quality in the context of dissemination of health information through online platforms [48, 49, 50]. Information quality is defined as the degree to which information is suitable for doing a specified task by a specific user, in a certain context [51]. Social media is one of the online platforms that gives major impact in disseminating health information because its capability to support the communication process to become more efficient [52]. In communication, the quality of information is rated high as it gives positive impact to targeted audience to accept health information. Moreover, several researchers have discussed the importance and positive impact of quality health information [53].

In the study of social media for health communication, the quality of health information is one of the most crucial elements concerning the general public [53]. Changing to positive behaviour is the ultimate goal of every health professionals. Hence, to achieve the desired outcomes, health professionals and relevant organizations must have high understanding of social media in order to be able to make the desired goal a reality [53]. Meanwhile, in the context of organ donation promotion, social media has been cited as significant and has a positive impact to the population in

terms of providing basic knowledge and concepts about organ donation by delivering quality information as well as giving a positive image [54, 55].

Furthermore, Kang and Kim [56] found that the content of a social media which has good quality provides direct impact on the information usefulness. Moreover, in examining the relationship between information quality and information usefulness, Samsi et al. [57] found the information quality to represent a dimension of accuracy as the major predictor of the positive relation with information usefulness among Malaysians whom perceived the quality information as the main elements for them to use the information in a confidence way without any doubts.

In contrast, Sun, Zhang, and Xiao [58] found that there is no significant relationship between information quality and information usefulness on internet platforms because the technology already going along several phases of advancement and this makes the quality of information is significantly enhanced along with that advancement process. Huntington et al. [59] stated enormous choice of digital health information on the web increases people's scepticism towards the health-related information and makes them believe less in the quality of information and subsequently become reluctant to accept or use that information. Similarly, Liu, Li, Zhang and Huang [60] found that there is no significant relationship between the information quality and information usefulness. However, the study examined in context of virtual communities by focusing on the expectations and the performance of communities towards the information quality.

From the above discussion, hence, this shows that information quality is noteworthy to be investigated in the context organ donation. In addition, based on the works by [52,53], we therefore assumed that information quality has a positive relationship towards information usefulness.

2.2 *Information Credibility*

The aggressive growth of digital information has encouraged scholars to examine the ways people make assessment of credibility through online information medium [61]. In support, there is an abundance of studies that examine the importance of information credibility in various areas including health information [62, 63] and retail commercial marketing [64]. Meanwhile, in context of health-related information, individuals tend to display critical judgement in the process of evaluating the credibility of information sources [48, 65].

Bateman [66] revealed that individuals prefer to source information that is credible when they seek information. Additionally, the author pointed out that information credibility as a crucial criterion that is needed by the individuals to accept the information. Kim [67] concluded that the source of information that is credible is most frequently quoted by the respondents (general public in range age of 20 to 30) as an important element for influencing them to perceive the information as useful. Thus, based on the review from the discussion from previous studies, information credibility is an important aspect associated to the source of the information [68].

The authoritative factor is a main contributor for the information to be perceived as credible by young adults and it is an important predictor in order to accept the health information in the online world [62]. The authoritative source of health information that is associated with specific words or names such as "Dr.", "Hospital", and ".gov" have a huge influence to increase the credibility of young people towards health-related information [69]. The authors also stated that young people often seek and get health-related information was from social media platform. Therefore, in the world that is constantly emerging with latest technologies, it is important to review the credibility of information [69]. Moreover, the rapid changes in social media affect the credibility of information in the online world which can influence the attitude and behavioural intention of the users [70]. In the context of health-related product, the credibility of information also gives high positive impact for the context

of advertisements which influence consumers to accept the information delivered to them [63].

The information credibility was found to have a positive influence on information usefulness in context of online health information [70]. Rowley, Johnson, and Sbaffi [71] found that there are high similarities between men and women in their belief for the credibility of online health information in context of health-related promotion and prevention. Metzger and Flanagin [72] discussed the Piaget's stages of revolution of people's credibility evaluation which consists three stage: 1) preoperational stage (for ages in between 2 to 7 years old) is about how the children confront the difficulties in assessing the sources because they do not own the ability to understand and that individuals may have the viewpoints and motivation that vary from their own, 2) concrete operational stage (for ages between 7 to 11 years old) is the stage where children might give attention to the superficial indicators of sources credibility (site attractiveness or the site design) and make them tend to make reason based on information that they get from tangible or physically contact, and 3) formal operational stage (for ages 11 until adolescence) is where the individual begins to own the ability to evaluate credibility based on other factors (for example task factor which refers to the experience and environmental factor which refers to genetic) but this process will be an iterative process. Based on discussions and previous findings, the youth are mostly were unconcerned about the credibility in content of online digital media [73, 72]. However, the youth population is an important target group in organ donation campaign because they have tendency to pledge as organ donors [74].

In addition, the health information that is delivered through the channel of social media was found to have a positive relationship between information credibility and information usefulness. Meanwhile, source credibility of information is determined by the factor of trustworthiness and goodwill [75]. This is supported by Andrews, Domdouzis, Hirsh, Lefticaru, and Orphanides [76] who reported that credibility has positively influence the usefulness of information. Zhang, Ito, Wu, and Li [77] assert that the information credibility has a significantly positive impact towards

information usefulness in services sector and drives people to adopt the information from social media.

In contrast, Bates, Romina, Ahmed, and Hopson [78] found that source credibility does not have a significant positive relationship with information usefulness for consumers to evaluate the health information in online medium. The author discussed the reason behind this contradict findings because people have low intention to seek other sources of health information and also have the perception that all sources of information are at the same level of credibility. Based on the above arguments, it shows contradictive findings on the relationship between the information credibility and information usefulness in context of online health information and marketing which indicates the importance of this relationship to be studied. Hence, based on the research by [75,76,77], we propose that information credibility has a positive relationship information usefulness.

2.3   *Visual Information*

The visual refer as a constituted dimension of visual that are meaningful to represent our real-life world [79]. The visual information defines as the pictorial like photos, videos, pictures which represent a product and the research related visual information are usually focus in area of visual information towards memory as well as in the area of the effect of visual information towards the people attitudinal response [80].

The factors that contribute to the importance of visual information for humans are as follows: 1) visual information is easier to understand which is enable to break through the barriers of culture or linguistics, 2) humans have the ability to remember almost 80% from the things that they see compared to text (reading the information) which is only 20%, 3) the changing of human needs that prefer shorter span of time and optimize content which can be done through visual, and 4) the visual has an eye catching characteristic which is able to touch emotion of humans [81]. Hence, in the context of present study, the importance of visual information as the role to attract attention of people to be aware about

the importance of organ donation to save lives. Visual information like photograph acts as universal language that makes it possible for all people regardless of language or age will understand the meaning or message that it intends to deliver [82].

In regards to health related information, previous studies show that viewers tend to forget instantly almost 40% - 80% of the information that is delivered by the health care professionals [83] and it will become worse if the people have very low skill of health literacy [84]. Health literacy refers to the degree of individual's capacity to process and understand the basic information in order for help them to make decision related to health [85]. One common reason for people to be reluctant to register as organ donors is lack of knowledge and understanding about the process related to organ donation [86]. Barros et al. [87] revealed that in order to overcome the health literacy problem among the people is by delivering visual information which is it will enhance the level of understanding towards health-related concept. Therefore, the visual information will be able to transmit the concept of health-related to people in expeditiously, clearly, and in a simple manner [88, 87].

Alotaibi et al. [89] highlight that the use of social media platform for communication gives impact in positive direction to fulfil the needs of information among people by delivering in format of video or photograph. On the other hand, Hansen, Eisner, Pfaller, and Schicktanz [90] discuss the campaign for organ donation targeted at people by delivering the information in form both of verbal and visual through social media has positive influence to people's attitude and belief on organ donation.

Furthermore, Barros et al. [87] concluded that in studies of health care, there is a significant positive relationship between visual information and useful of information. In addition, Barros et al. [87] highlighted that the pictograms through various channels like website or online have important role to educate people. This phenomenon increases their knowledge and help individuals to make decision related to health. Another explanation for this positive relationship between visual towards useful of information is people are more in favour of quick cognitive nature because visual refer

to the picture is able to give more meaningful messages rather that the text only information [91]. Moreover, the visual information such as pictures with text or written information to convey information is found to be more effective and understandable among viewers to interpret and accept messages [92]. Furthermore, a study conducted in Korea also confirmed that the visual information positively influence usefulness of information and improving the effectiveness of health information in website as well as align with the demand of public towards health information [93]. Thus, in this study, we assume that visual information is imperative and has a positive relationship towards information usefulness.

2.4   *Accessibility of Information*

The increasing numbers of users of social media shows that it is gaining popularity because it has the ability to give effective communication for an organization which is able to reach larger audiences quickly [94]. Additionally, due to the interactive nature of social media, the management of organizations build and continue their public social media sites with the objective to improve the relationship between organizations and the general public [95]. Because of the positive trend on social media, the use of traditional business tools is less appealing [96]. Apart from that, this trend also has resulted the government to use social media platforms in building relationship with citizens by providing an avenue for citizens to access online information and other services [97, 98].

The important factor in contributing to accept the technology information of social media among the people is the accessibility which mean the people find it easy to access the information in social media sites [99]. Another factor which contributes to accessibility is the convenience to use the social media to get some information and the availability of the information when using the platform of social media [100]. Social media helps health professional in putting the management in better position due its ability to immediately respond and cover widely in information delivery [101].

The uses of social media in the context of health communication are beneficial in terms of the vast availability of information, ability to tailor information, fast interactions with others and also accessibility toward health information [53]. Factors drive the adoption of social media to access information from government bodies are mostly because of quick response or transparency [102]. In addition, in Malaysia context, availability of technology and the ability to exploit the technology are the top reason to use social media [103].

In the organ donation context, the emergence of social media like Facebook provides better communication with people to allow them immediately access towards the information related to organ donation (statistic about organ donation and the information related live experience of disease) and leads to more favourable outcome towards organ donation [104]. The elements of simple and easy accessibility to organ donation information is one of the predictors suggested to be included to eliminate the barriers to register as organ donor [105].

Furthermore, Yoon and Kim [62] stated that there is a positive relationship between accessibility of information toward useful of information. According to Cline and Haynes [106], there are three ways in how consumers access the health information in online platform: 1) looking straightforward for health information, 2) to be part of health information support group, and 3) arranging consultant session with health professionals. In detail, those three ways are interrelated with each other but people mostly access health information in direction of straightforward for health information and to be part of health support group. This is supported by Yoon and Kim [62] that the positive impact between accessibility towards information and useful information are because the online health information is convenience and fast. In addition, the characteristics of social media which are available at anytime and anywhere contribute to a positive relationship between the accessibility of information with information usefulness [107].

However, the level of maturity of technology skills and knowledge among the people is an obstacle to access the information in social media

platform and also the fear of pressure from social media makes people reluctant to access information in social media [108]. Fear pressure in context of health information refers to the issue related with expectation by other users who compare our motivation and theirs in health context [109]. Despite of these issues, we still presume that accessibility of information is important and has a positive relationship towards information usefulness. Therefore, this study proposes that there is a significant relationship of accessibility of information toward information usefulness.

2.5   *Information Usefulness*

The information usefulness is stated as a main predictor to influence towards information adoption [110, 111]. According to Davis et al. [111], perceived usefulness is defined as the degree to which a person believes that using a particular system would enhance his or her job performance. The importance of information usefulness in online platform was discussed as a vital factor in communication process which is the information that is perceived as useful by individuals will be beneficial for them to reduce the risk that they face for certain types of topics [112]. Therefore, based on the arguments on the information usefulness, we believe individuals will frequently use and visit social media sites [113].

Furthermore, the platform of social media to disseminate the health information is one of the factors for increasing the usefulness of information because the ability to access social media at anywhere and anytime [114]. Another reason which contributes to usefulness of information is the information in social media is managed by the health experts [115]. For organ donation, the web 2.0 is used to disseminate information regarding organ donation using video or text which can be perceived as useful by viewers [37]. Additionally, in context of social media, the information usefulness was proven to encourage individuals to adopt information that influences their behavioural intention [116]. Moreover, human cognitives are influenced by the functions and features that are available in information technologies system and this will lead to strengthen the usefulness toward information because they perceived that the information technologies are able to deliver benefits for them [117].

According to Saeed and Abdinnour-Helm [117], the less complex of the information transferred by a technology the more positively it increases the usefulness of the information. The social media in group of web 2.0 generally comes out with new interface design that are user friendly which encourage people to use the social media platform [118].

In the context of health information, information usefulness is found to positively impact information adoption [112]. The process of usefulness to adoption of information is in form of the informational influence, which indicates how individuals assess information and receive from others and useful for them in their real life [110]. The availability of greater deal of information in online platform is reportedly to influence towards how individuals perceived the information as useful because individuals are able to review and process abundance of information which directly contributes to increase the usefulness of the information [119]. Similarly, an earlier study in service sector shows that the credibility and vividness of information (appearing in term video and text) contributed to information usefulness and provides positive association towards adoption of information [120]. Additionally, Borzekowski and Rickert [121] revealed that active users use internet to search health information on various range of topics and found the information useful to act as a great substitute for the information that they get from health care providers.

Peng, Liao, Wang and He [122] stated that in context services, source credibility and information quality are the predictors to information usefulness. The authors also found that the information usefulness positively impacted towards adoption of information. In contrast, Conesa et al. [123] discuss that the information is less useful from perspective of general public toward the organ donation campaign because they stated that they also encounter others health promotion campaigns or activities from other sources which make it becomes overcrowded and make them reluctant to adopt the organ donation information. Meanwhile, Lee [113] discusses that individual does not adopt information easily because certain individuals have their own perceptions for certain issues.

Apparently, the information usefulness is an important factor for individual in the communication process in platform of social media. We assume the information usefulness makes individual accepts the information as beneficial and useful for them which is through social media platform. Therefore, we propose that information usefulness has a positive impact on information adoption.

2.6   *Information Adoption*

Cheung, Lee, and Rabjohn [124] define the information adoption as the individual process in which the individual purposely engaged and use the information. In other words, people will adopt information after they consider the information as useful or helpful for them. Apart from that, information adoption refers to the degree of people that will accept the content of information that is perceived as meaningful for them which is after going through the process of assessing the content validity [125]. Equally important, the information adoption is related to the process of individual internationalization phase in the context of knowledge transfer that is the information that is exposed by individual will transfer to the internalized knowledge of individuals and the knowledge will give substantial meaning for people [126].

Chaiken and Eagly [127] discuss that the result may vary even though people are exposed to the same content because every person can generate exceptionally distinctive reactions as well as in different way to receive the content. The authors add the causes of this phenomena as each of individual has their own different perception, experiences and also sources the recipients getting the content. This argument adds an important element for the current study which is to investigate and understand the adoption of information process of people toward organ donation information.

In the perspective of organ donation, Woien, Rady, Verheijde, and Mcgregor [128] mention that internet website that contain information

about organ donation has significantly impact people for adopting the information and increases the registrations to be organ donors. The content of information can be divided into four categories which are as follows; 1) donor knowledge content, 2) donor consent reinforcement content, 3) donation promotion content, and 4) informed consent content [129]. Despite of this positive phenomenon of adoption, Hawn [130] revealed that major causes towards the lower adoption of information from social media because the factor of lack of happiness elements.

The initial initiative of people to use the information system is the key to determine adoption of information and it is found to have a positive influence towards behaviour intention [130]. According to Hausmann, Touloumtzis, White, Colbert, and Gooding [131], individuals reported that social media is able to deliver and help them to get health information that is useful for them. Later, in previous studies in context of health information by using social media as a medium for communication, Gabarron et al. [132] discuss that those individuals who adopted health information from social media will have exceptionally high effect towards their intention for behavioural changes which this occurs after the individual is exposed by health campaign in social media. Recently, Erkan and Evans [133] stated there is a positive impact in relation between the information adoption and intention. Therefore, we propose that information adoption has a positive effect towards intention to register as organ donors.

2.7   *Intention to Register as Organ Donors*

Intention as academically speaking has been extensively examined and discussed in various themes. Generally, intention is defined as the conceptualization of the readiness in individuals to perform the actual behaviour [134]. Intention also refers to the aspect of people that they will act based on their intention which is influenced from their own skill that they need to perform such behaviour and also by the situational factors which make that behaviour is possible to perform [135]. Moreover, another critical factor to study the individual intention in this research is due to

the argument by earlier scholars that stated the intention is a reliable and vital source for devise in related strategies to achieve the ultimate target of changing behaviour [136]. In addition, intention to register as organ donors depends on how the mass media portray the information (organ donation) [137].

Furthermore, online organ donation campaigns that emphasize on the critical issue of organ donation were found to influence the intention of individuals to register as organ donors [33]. The authors discuss this effort to emphasize the issue of organ donation will only be successful in influencing the intention to register as organ donors by making individual notices that this crisis needs more individual action to solve it which is by registering as organ donors. Feeley et. al [86] discussed that the intention to register as organ donors is influenced by the perceived realism that was portrayed by media about the reality of organ donation. The authors discuss the perceived realism referring to the ability of media to present accurate information which reflects to our real world. Despite of that, Morgan et al. [137] reveal that individuals often claim that they have often encountered inaccurate information on media and this issue is an obstacle for them to decide to register as organ donors.

Therefore, in light of the above argument, investigating towards the intention to register as organ donors is more relevant and crucial than investigating in their intention to donate organs. This statement is supported by previous studies that found people who owned the organ donor card show a higher commitment for behavioural action of organ donation compared to the people who voiced out that they want or willingness to register as organ donors but did not sign the form to become official organ donors who own the organ donor card [138].

In addition, Cheung and Thadani [139] suggested that the adoption of information that is disseminated through platform of social media has higher impact towards the individual's intention. Similarly, Cheung, Luo, Sia, and Chen [140] discussed that the information adoption has significant

relationship with individual's intention when subjects are using computer as a mediator to access information related organ donation. Recently, in context of commercial marketing, Erkan and Evans [133] stated and proved that the information adoption has a positive influence toward purchase intention in context of social media. Therefore, in this study, the information adoption is proposed to have positive significant impact toward individual's intention to register as organ donors.

3.0 PURPOSE FRAMEWORK

Based on extensive discussion above, the purpose framework is as follows:
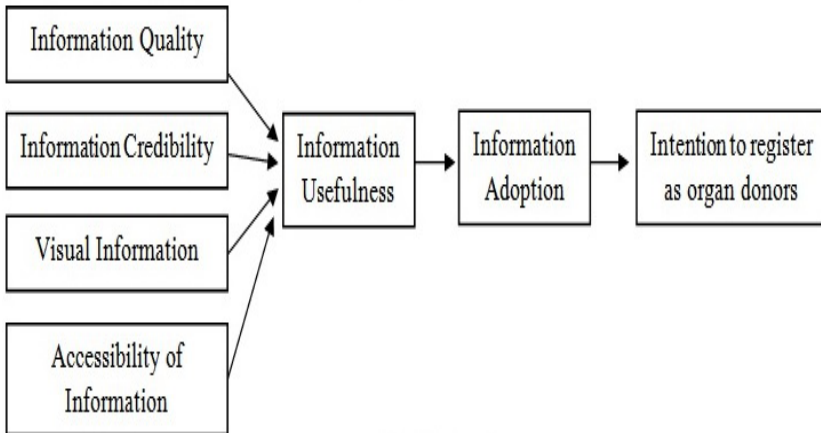

Figure 1: Purpose Framework

This study identifies four important predictors toward information usefulness which are information quality, information credibility, visual information and accessibility information. Meanwhile, the information usefulness is proposed to mediate the relationships between information quality, information credibility, visual information and accessibility information toward information adoption. Finally, the information adoption is proposed to mediate the relationship between information

usefulness and intention to register as organ donor.

4.0 CONCLUSION

The objective of this paper is to search and identify the factors that contribute to individuals to accept information from social media as useful for them. From the discussions and reviews, information quality, information credibility, visual information and accessibility information are proposed to become as predictors for information usefulness. Meanwhile, the information usefulness is assumed to mediate the relationship between the four important independent variables and information adoption. On the other hand, information adoption is expected to mediate the relationship between information adoption and intention to register as organ donors. This paper is expected to assist future researchers to get clear insights and understanding about how individuals accept information as useful for them through social media platform in the context of organ donation. Additionally, this paper is expected to be beneficial to marketers especially social marketers in designing their message using social media. With this in mind, the authors are therefore, will use and extend the proposed research model as the framework for their future research.

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