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# TOWARDS AN UNDERSTANDING OF THE FACTORS THAT INFLUENCE CITIZEN TRUST IN SOCIAL MEDIA HEALTH PLATFORMS

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## **Abstract**

*Internet penetration rates continue to grow, in the United States for example, it stands at 87% of the population (WorldBank, 2016). In addition, the variety of purposes for which citizens use the Internet is increasing. This is particularly evident in the area of health, where a growing number of Internet users utilise the Internet as a source of health information. The growth in citizens seeking health information online has coincided with the emergence of social media health platforms and applications. While such initiatives have potential to empower health consumers through increased diffusion of targeted health information, the success of these platforms is dependent on their acceptance and adoption. Moreover, there is a lack of understanding as to what factors can generate trust in such platforms. This is despite the fact that trust is an essential component of traditional healthcare delivery and results in increased engagement and participation in health forums.*

**Keywords:** Trust, social media health platforms, health websites, design, health information

## **1.0 Introduction**

Internet penetration rates continue to grow. As of this year, Internet penetration for the United States stands at 87% of the population, while in Ireland the rate has risen to 82% (WorldBank, 2016). In addition to growing Internet penetration rates, the variety of purposes for which citizens use the Internet is increasing. This is particularly evident in the area of health. For example, a growing number of Internet users utilise the Internet as a source of health information. This growing trend is evidenced by recent Pew Research Centre (2011) findings that reveal 80% of all Internet users have searched for health information online. Interestingly, that figure encompasses a broad

age demographic ranging from 59% of all adult Internet users to 94% of teenagers. The results also reflect a broadening of technical access platforms, with 78% of such searches being performed on wireless, mobile devices (Pew Research Centre 2010; 2012; 2013; 2014).

The growth in citizens seeking health information online has coincided with the emergence of social media health platforms and applications, with some 250,000 available in the iPhone store alone. Health agencies and organisations are cognisant of the opportunities that social media offer and have responded accordingly. For example, Mayo Clinic has established a Social Media Network (MCSMN), which connects 6,584 health-related organizations that actively use social networking sites (Mayo Clinic, 2016). Such information systems offer a novel opportunity to improve public health through diffusion of health information. However, whilst such initiatives have potential to empower health consumers through increased diffusion of targeted health information, the success of social media health platforms is dependent on their acceptance and adoption.

Moreover, there is an even greater lack of understanding as to what factors can generate trust in such platforms, despite the fact that trust is an essential component of traditional healthcare delivery and results in increased engagement and participation in health forums. Understanding the factors that influence citizens' trust in social media health platforms is therefore critical to their adoption. Research in health information systems has identified a staged model of trust in which visual design, information credibility and personalisation play an influential role in citizens' decisions regarding trust in health websites (Sillence et al., 2005; Sillence et al., 2004; Vega et al., 2010). While the extent of this research is limited, it does uncover an important role for trust in a citizen's decision-making process.

This paper will review the literature associated with trust, factors that influence trust in the context of social media health platforms and then offer a revised framework for the analysis of discussed factors.

## **2.0 THE TRUST CONSTRUCT**

The Oxford Dictionary (2016) states that trust is a firm belief in the reliability, truth, or ability of someone or something.

### **2.1 WHY TRUST IS IMPORTANT**

Research on trust uncovers multiple interpretations; such is the case for a phenomenon that occurs in all of life's environments. In fact, it has been described as the glue that holds society together and the lubrication that makes it work more effectively (Newton, 2014). In a technology mediated environment, trust assumes even greater importance.

While the study of trust in technology mediated environments has received attention, that attention has been fragmented. This is particularly true for understanding why individuals adopt particular health information platforms.

Each discipline has a particular emphasis, which is reflected through a unique focus and provides differing understanding of antecedents and consequents, and varies considerably according to discipline and context. As a result, our understanding is context driven and can be quite fragmented. This is reflected in differing definitions of the construct. Unless definitional clarity is achieved, it is impossible to correctly measure trust with any degree of consensus and therefore our understanding and insights into the construct remain limited.

### **2.2 DEFINITIONAL CLARITY**

Trust has been defined in different ways by researchers across a broad range of disciplines. For example, sociology literature appreciates that the key to understanding trust in modern society is to recognise that its constructs can alter depending on particular environments and systems (Luhmann, 1988). Gambetta's (1988) sociological definition states:

*Trust (or, symmetrically, distrust) is a particular level of the subjective probability with which an agent assesses that another agent or group of agents will perform a particular action, both before he can monitor such action (or independently of his*

*capacity ever to be able to monitor it) and in a context in which it affects his own action. (Gambetta, 1988: 217).*

In psychology literature trust is perceived as a concept that reduces risk and uncertainty with respect to the unknowable actions of others (Niu & Xin, 2009). Lane (1998) regards trust as a set of calculations that weigh the cost and benefits of certain actions to either a trustee or trustor.

Hofstede et al., (2010) agree the trust is an essential component of any society, that without trust in institutions and specialists a society cannot survive. Echoing Luhmann (1998), these authors highlight that trust does have variations in definition across environments, and particularly cultures. Hofstede et al., (2010) note that trust is sensitive to culture and that such differences must not be ignored. Such neglect can lead to a breakdown in relations.

Mishra (1996) in organisational literature, found trust to have four dimensions or components, stating trust is one party's willingness to be vulnerable to another party based on the belief that the latter party is;

- Competent
- Open
- Concerned
- Reliable

Organisational theory literature also regards trust as the hallmark of effective relationships (Dirk, 1999), while Rousseau, et al. (1998) have noted commonalities across common definitions, namely:

- Risk
- Expectations or beliefs
- A willingness to place oneself at risk with the assumption and expectation that no harm will come to oneself.

In management literature, Mayer et al., (1998) highlight the importance of trust in facilitating optimal working conditions. Mayer et al., (1998) view trust from a dyadic perspective; the trustee and the trustor. In their model, a trustee is expected to carry a

characteristic of trustworthiness. This trustworthiness is based on an analysis of one's ability, benevolence and integrity. The greater a trustee's perceived trustworthiness the more likely a trustor will not perceive risk in a given scenario, in turn increasing a trustor's propensity to trust.

Semantics differ but the overall understanding is accepted. Whilst it is clear that differences exist in terms of how trust is expressed by each of these researchers according to the focus of their discipline, a number of commonalities are also evident. These include an understanding that trust is expressed in terms of expectation or belief; that trust exists in a context of potential or perceived risk; and finally willingness to place oneself at risk.

### **3.0 TECHNOLOGY ADOPTION AND TRUST**

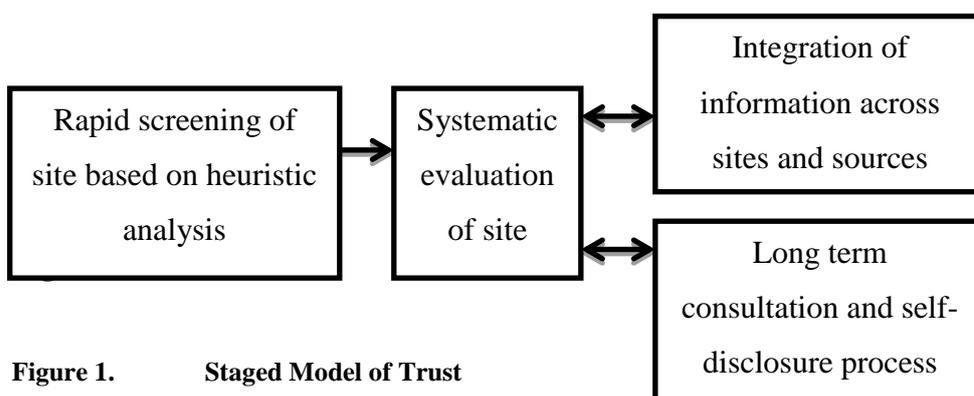
When researching trust within Information Systems literature Kim (2014) argues that the concept of trust is less explored, while present literature indicates a relationship between the perceived reputation of an information system and one's vulnerability to risks. In researching the role of trust in ecommerce Connolly & Bannister (2007) agree that the constructs of trust can vary across environments. Lederman et al. (2014) find there is a significant difference between the behaviour of ecommerce consumers and the behaviour of citizens searching health information online. These differences require a greater understand as to the factors that influence trust in different environments.

Current research into factors that influence trust has focused almost entirely on the consumer experience within ecommerce systems. Lederman et al. (2014) and Fan et al. (2010) find ecommerce consumers to perform a limited analysis, or scan, of system attributes when evaluating the trustworthiness of a system; this is based on an ecommerce experience being predominantly a once off interaction with a system. This is in comparison to citizens seeking health information online, who display lengthened observation and interaction tendencies with systems (Fan et al., 2010). Smailhodic et al. (2015) in their exploration of social media enabled health interactions suggest the development of interaction topologies so that various system interactions can be understood. These authors suggest that contemporary trust

theories do not suffice when reviewing the trust formation process in a non-commercial online community environment.

Analysis of current literature uncovers very limited insight as to the factors that influence trust when considering social media health platforms and online health information communities (Lederman et al., 2014; Fan et al., 2010; Sillence 2004; 2005). Sillence (2004; 2005) has identified a staged model of trust in which visual design, information credibility (Metzger & Flanagin, 2013) and personalisation play an influential role in citizens' decisions regarding trust in health websites (Sillence et al., 2005; Sillence et al., 2004; Vega et al., 2010).

Sillence et al., (2005) reveal a staged model of trust in which mistrust or rejection of websites, and conversely trust and adoption of health websites is based on design factors and also on content factors such as source credibility and personalization (Figure 1). Heuristic analysis refers to the look and feel of a site, specifically it relates to design features commonly associated with Nielsen's heuristics (Nielsen, 1995) such as site navigation and visual appeal. Systematic evaluation refers to user analysis of information credibility (Metzger & Flanagin, 2013) on a site, in particular to this stage users will analyse language style and tone of a site; does the site contain excess medical jargon, is the site's information aimed at an intended audience, is the site fit for purpose. Users at this stage also evaluate information sources; is there expertise associated with the site's content. Long term engagement through source integration and self-disclosure is the final stage of the model. This refers to users' analysis of personalised content, interactivity, updated or dynamic content and user generated content. User generated content and interactivity allowance is said to foster long term engagement.



**Figure 1. Staged Model of Trust**

### 3.1 PROPOSED FRAMEWORK

Leimeister et al., (2005) and Lederman et al. (2014) add to current understanding as to the antecedents of trust in social media health platforms and online health information communities. They reveal the facilitation of empathy within an online health information community as being a significant factor that influences citizen adoption of social media health platforms and related online health information communities. Empathy is a communicative process of understanding and responding to the (inferred) feelings and emotions of others (Eisenberg et al., 1988). Janssen (2012) includes that adherence to empathic design in technologies can increase trust in technologies. In the context of social media health platforms empathy can play an important role, as citizens who seek health information online often return to the online community, developing on previous interactions. This is not the case in an ecommerce system.

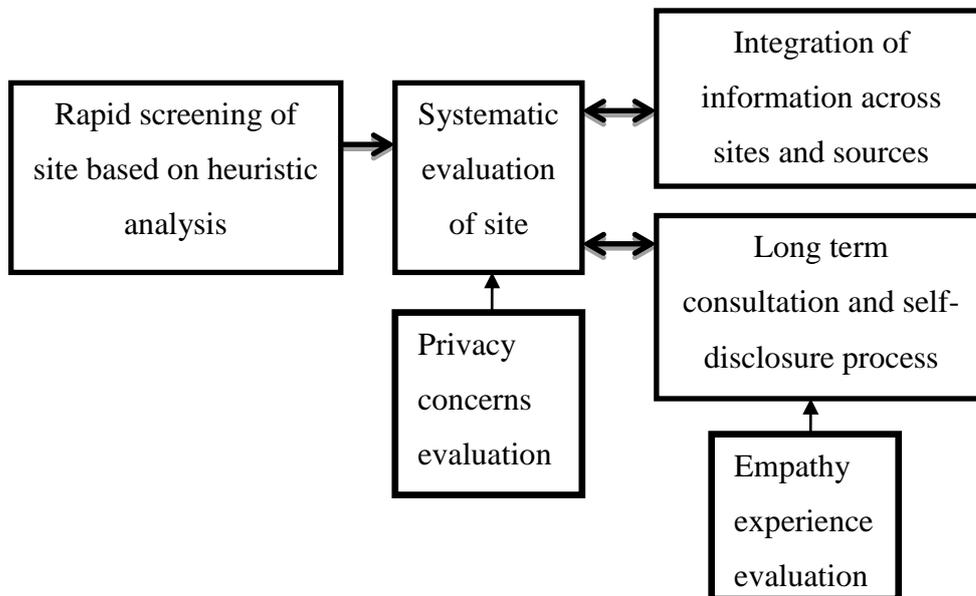
The empathy experience is an integral part of a patient's health service experience. Literature points to current stresses on traditional health systems as a factor that reduces carers' ability to develop empathy with patients. Leimeister et al., (2005) note that doctors are unable to satisfy patient health information needs which in turn reduces the patient experience of empathy. This reduction of empathy experience is thought to be partly responsible for a shift towards citizens seeking health information on social media health platforms and online health information communities. Online health platforms create communities that allow citizens to share personal experience and information, in turn contributing to trust building and the empathy experience within social media health platforms and online health information communities.

Privacy also plays an influential role in the development of trust in online communities. Transparent practice as to how online entities make use of private data and also the display of privacy policy statements contribute to the development of trust in online environments that involve the exchange of private data, (Bansal et al., 2015). Pavlov et al, (2007) note that privacy protection in turn helps in the development of consumer trust in ecommerce systems. Within health care systems privacy has played a central role for centuries, (Kenny and Connolly, 2015). Doctors pledging the Hippocratic Oath explicitly promise to *'respect the privacy of my patients, for their problems are not disclosed to me that the world may know'*

(Lasagna, 1964). While in the context of electronic health records Angst & Agarwal (2009), Li & Slee (2014) uncovered that privacy concern had a negative influence on citizen intentions to adopt said records.

Despite the apparent link between trust development, privacy considerations (Kim, 2014; Kenny and Connolly, 2015) and the empathy experience (Leimeister et al., 2005; Lederman et al., 2014) no studies have been carried out that examine these links. The possible loss of private health data, submitted when citizens use a social media health platform or online health information community could have an important influence on citizen trust in such platforms and to their adoption on a large scale. Moreover if these platforms and communities do not adequately facilitate the experience of empathy, notably missing from face to face interactions with doctors, there is a risk that citizens will cease to return to some platforms and communities.

Thus it is recommended that a framework (figure 2) considers the following factors; visual design, information credibility and personalisation. This is to be extended to explore the role of empathy experience and privacy concerns. This framework should be tested in the context of factors that influence citizen trust of social media health platforms and online health information communities.



**Figure 2. Proposed Staged Model of Trust**

## **4.0 CONCLUSION AND IMPLICATIONS**

In reviewing the associated literature, commonalities are found in the factors that influence one's trust. Almost all literature on trust indicates that people calculate and evaluate perceived risks and vulnerability in a given environment. When no risk is perceived trust is said to develop; where risk is perceived to exist distrust is said to develop. By focusing on information systems literature that explores the antecedents of trust one uncovers new insights about the factors that influence trust in a specific context; social media health platforms and online health information communities. In this context trust development is affected by a three stage model (visual design, information credibility and personalisation). Contemporary research extends these antecedents by bringing to light the importance of the facilitation of the empathy experience. Literature also uncovers a lack of exploration into the role of privacy concerns when trust is being developed.

This paper and the future testing of the proposed framework provide valuable insights into the drivers of trust in the context of citizen adoption of social media health platforms. They provide an understanding of the role of trust in citizen adoption of social media health platforms, by integrating trust and health technology adoption literature to develop a framework for investigating the role of trust in citizen adoption of social media health platforms. That framework will be empirically tested. The insights gained from this study can be harnessed by both health organisations such as Mayo Clinic, and social media technology vendors to ensure their offerings are designed in ways that generate patient trust, thus ensuring increased adoption, more informed citizens and improved health outcomes.

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