Online Consumer Trust: A Multi-dimensional Model

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ABSTRACT

Consumer trust is widely heralded as an essential element for the success of electronic commerce, yet the concept itself is still clouded in confusion by the numerous definitions and points of view held across multiple disciplines. It is the aim of this paper to synthesise the viewpoints from across the disciplines and bring them together in a multi-dimensional trust model. It is hoped that in doing so, these broad assortment of views will highlight the true underlying nature of trust in the online environment.

From these multiple disciplines, three dimensions of trust emerged: Dispositional Trust, Institutional Trust and Interpersonal Trust, each bringing their own influencing factors into the overall intention to trust. From this model emerged the notion that the consumer as an individual is central to the understanding of trust, and in turn that the individual's personality and culture form the foundation for the development of trust.

INTRODUCTION

There is increasing acceptance that consumer trust is a key foundation for electronic commerce success. If the consumer can not develop some sense of confidence in the vendor's competence, predictability, benevolence and integrity, then they are likely to abort the purchase and simply look elsewhere for a more trustworthy alternative (McKnight & Chervany, 2002; McKnight, Cummings, & Chervany, 1998; Tan & Theon, 2001).

Much of the literature surrounding trust in electronic commerce looks to substitute trust by focusing solely on the aspects of consumer privacy and security (Belanger, Hiller, & Smith, 2002; Benassi, 1999; Dekleva, 2000;

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Huberman, Franklin, & Hogg, 1999). The literature also tends to lack a firm definition of trust and therefore often causes further confusion by presenting the belief that trust is a simple factor that can be explained by addressing these vendor specific factors. This does not however address the issue of trust as a whole and simply serves to look to deal with addressing the symptoms rather than the underlying issue.

The lack of scope in the Information Systems literature has been highlighted in Gefen (2002) where it was stated that there was a "need to establish the dimensionality of trust as it is applied to MIS topics and in doing so to recognise that although trust may occasionally be unidimensional as found by some research, it may also be multi-dimensional depending on the circumstances." He went further stating that in addressing trust automatically as a one-dimensional construct, researchers may be oversimplifying their study which in turn may prevent them from revealing the whole story (Gefen, 2002). However, as with much of the literature surrounding trust, Gefen (2002) addressed the attributes of trust rather than the nature of trust as a whole.

To further research in the field of electronic commerce, it is necessary to widen the research scope and bring in additional perspectives from outside of the Information Systems literature. Webster and Watson (2002) highlighted the need for Information Systems literature for this widened scope, when they commented that "IS is an interdisciplinary field straddling other disciplines, you often must look not only within the IS discipline when reviewing and developing theory but also outside the field". This viewpoint is highly relevant in addressing the issue of trust, as it has long been theorised and argued across many disciplines. It is therefore necessary to take into account the numerous perspectives these disciplines attach to the topic of trust.

Taking a holistic view of trust that encompasses multiple disciplines is somewhat rare in research into trust in the electronic environment, yet it has the potential to yield the greatest insights into the underlying factors at work within the consumers mind in their assessment of an electronic retailer. Borrowing from the fields of psychology, sociology, marketing and management as well as information systems we can help to create a better understanding of the true nature of trust online.

The purpose of this paper is therefore to present a multi-dimensional insight into the nature of consumer trust online. We will firstly look to synthesise a broad literature base surrounding trust in relation to electronic commerce and then look to identify gaps and inconsistencies in the current literature. These gaps will then be addressed through the development of a multi-dimensional trust model that can be applied to gain an insight into this commonly misunderstood construct and provide a better understanding of the true nature of trust.

Although the formation of trust holds similarities across differing business forms, this papers scope has been narrowed to focus primarily on the B2C (Business-to-Consumer) environment.

LITERATURE REVIEW

What is Trust?

Before we look to delve too deeply into the nature of trust, we first need to form a clear idea of just what trust is. Literature that fails to take this step often ends up causing further confusion and debate amongst researchers rather than adding to the knowledge base. The lack of an widely accepted definition has been highlighted by numerous researchers (Belanger et al., 2002; Bigley et al., 1998; Lee and Turban, 2001; Lewis and Weigert., 1985; Yoon, 2002) but most clearly in Hosmer (1995), where it was stated that "there appears to be widespread agreement on the importance of trust in human conduct, but unfortunately there also appears to be equally widespread lack of agreement on a suitable definition of the concept".

If we turn to dictionary definitions of trust, we are still not much further from the confusion. The Oxford dictionary holds 17 definitions for the word trust, whereas Webster's holds 18. Selections of the most relevant definitions from these publications are shown below in Table 1.

Table 1: Dictionary Definitions

Oxford Dictionary	Webster Dictionary
Confidence in or **reliance** on some quality or attribute of a person or thing, or the truth of a statement.	Assured resting of the mind on the **integrity**, veracity, justice, friendship, or other sound principle of another person; **confidence**; **reliance**.
To accept or give credit to without investigation or	To **risk**; to venture **confidently**.

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evidence.	
The condition of having **confidence** reposed in one, or of being entrusted with something.	To place **confidence** in; to **rely on**, to confide, or repose **faith**, in; as, we can not trust those who have deceived us.
The quality of being trustworthy; fidelity, **reliability**; loyalty, trustiness.	
Confident expectation of something; **hope**.	

From these dictionary definitions it is apparent that similar words are repeatedly appearing, words like reliance, confidence, integrity, faith, risk and hope. The diversity of the definitions indicates the diverseness of the topic, yet researchers often try to narrow the scope of trust so it will fit into their empirical research. This is a valid form of research if the narrowed scope is adequately explained and reasoned, but it needs to be made clear just where the research boundaries begin and end. This is illustrated in a large body of research surrounding trust in Information Systems literature which often leads people to the conclusion that addressing consumers privacy concerns and setting up a safe shopping cart is sufficient to deal with the issue of trust online, while in reality this only addresses a singular dimension.

It is important to note that these definitions are focusing on identifying the attributes of trust rather than defining trust itself. This idea needs to be emphasised, as it is a point of much confusion in the literature, whereby researchers look to address these attributes alone rather than the construct of trust as a whole.

Table 2: Attributes of Trust identified in Literature

Author	*Attributes of Trust*			
	Competence	*Benevolence*	*Predictability*	*Integrity*
(Cheung and Lee, 2001)	x	x		x
(Deutsch, 1958)	x	x		
(Doney and Cannon., 1997)		x		x
(Gefen, 2002)	x	x		x
(Lee and Turban, 2001)	x	x		x

(Mayer et al., 1995)	x	x		x
(McKnight and Chervany., 2002)	x	x	x	x
(Nöteberg et al., 2003)				x
(Ratnasingham and Pavlou., 2003)	x	x	x	
(Rousseau et al., 1998)		x		
(Sirdeshmukh et al., 2002)	x	x		
(Tan and Theon, 2001)	x	x	x	x

If we turn to the trust literature for a definition we do narrow the scope somewhat further as seen in Table 2. From those articles that clearly define the attributes of trust, we can see that the majority are centred on the ideas of competence, predictability, benevolence and/or integrity. Competence is the belief in the other parties' abilities, skills and expertise within the certain domain. It is the thought that the other party will be able to accomplish the expected level of service. Benevolence is the belief that the other party wants to do good for the customer and is not solely looking to make a profit. Predictability focuses on the belief in the other parties' consistent behaviour. Integrity is the belief that the other party will act in an honest fashion and adhere to an accepted set of principles or standards. McKnight and Chervany (2002) notes that predictability and integrity are similar, yet they differ as integrity is a value-laden attribute whereas predictability is not.

Across the literature there is a growing acceptance of Mayer et al. (1995) which presented that the attributes of ability (competence), benevolence and integrity as central to the concept of trust. As seen in Table 2 above, this combination of attributes has been the most commonly grouped assortment in literature (Cheung and Lee, 2001; Gefen, 2002; Lee and Turban, 2001). This line of thinking has also been further built upon in more recent research, which makes the addition of predictability to Mayer's identified attributes (McKnight and Chervany., 2002). Tan and Theon (2001) held a similar view, but described the attributes of trust slightly differently, naming them as competence belief, dependence belief, disposition belief and fulfilment belief which can be translated into the same attributes as noted above.

Defining Trust

Now that we have a clearer understanding of the attributes that make up trust we can start to look to incorporate the situational instances in which trust becomes important. There is a general widespread agreement across the literature on the conditions needed for trust to exist. Risk plays a central role in the fostering of trust and is a prerequisite for trust to arise as an issue, as if there is no risk then the consumer is not forced to make an assessment of trustworthiness (Deutsch, 1958; Mayer et al., 1995).

The most commonly accepted definition amongst the recent research on trust has taken a similar view to that of Mayer et al. (1995), incorporating vulnerability into their central definition of trust (Gefen, 2002; Lee and Turban, 2001; Rousseau et al., 1998; Tan and Theon, 2001). This definition holds that trust is a "willingness to be vulnerable", as when the consumer allows themselves to be vulnerable, they are taking a risk (Mayer et al., 1995). Rousseau et al. (1998) builds on this central idea of vulnerability, presenting that "trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another". The centrality of vulnerability in trust definitions can be traced back to Deutsch (1958), where it was presented that the consumer "perceives that he will be worse off if he trusts and his trust is not fulfilled than if he does not trust". The consumer therefore would be allowing themselves to be vulnerable while holding the hope that the other party will deliver on their promise.

Putting Trust in perspective

In identifying vulnerability as the central situational feature of trust, we can see the importance this holds in the electronic commerce setting. This vulnerability is magnified in the online situation due to the nature of the internet. In the traditional physical environment consumers attitudes and behaviours are often affected by intrinsic cues gathered from the physical surroundings such as lighting, colour, music and store layout (Bitner, 1992). When the consumer is faced with risk, they look to make a trust based assessment of the other party by looking to gather further information. This information search can take numerous forms, be it gathering intrinsic cues from situational surroundings, recalling past experiences in similar situations or looking for other external sources like personal recommendations from others (Koernig, 2003).

As a product offering moves from being a highly tangible to an intangible offering such as a "pure service", the greater the degree of associated consumer risk. The more intangible the product, the greater the influence the cues hold on the consumers purchase decision as there are fewer physical aspects for consideration (Bitner, 1992; Zeithaml, 1988).

As the internet does not allow the consumer to gather the same range of intrinsic cues as traditional physical shopping does, the perceived risk is magnified and therefore an assessment of trustworthiness needs to be made by the consumer. It is the dimensions involved within this assessment of trust that is the focus of this research, as the true underlying nature of the subject is still unclear and the point of much confusion. To try and provide a clearer picture of trust, it is necessary to look across the disciplines and look at the differing dimensions of trust.

The Dimensionality of Trust

As mentioned earlier, trust has been addressed across numerous fields and different conclusions have been reached. The field of psychology holds the view that trust is a personality based trait, which is a deep rooted feeling or belief that is shaped by the individual's life experiences. These life experiences mould the individual's disposition to form trust in general (as seen in McKnight and Chervany (2002)) and is commonly referred to as Dispositional Trust.

In stark contrast, sociology holds the view that trust is a social structure which is situationally constructed. Lewis and Weigert (1985) describes trust as being "applicable to the relations among people rather than to their psychological states taken individually" and therefore theorise that trust does not exist in the individual, but rather is the collective property of the groups involved. In the electronic commerce context this dimension has been labelled as Institutional Trust.

The social psychology perspective offers another view, which presents trust in terms of the expectations and willingness of one party in regards to another, as well as the associated risks this brings along with it (Lee and Turban, 2001). This perspective focuses on forming trust in another specific party and is often referred to as Interpersonal Trust.

The differing views currently evident within trust research are illustrated in Table 3. The literature has been categorized by the dimensions it covers, be it directly or indirectly. It also indicates the field the research originates from, with the information systems literature grouped further into broad and focused categories. Broad IS literature borrows ideas from diverse fields whereas focused IS literature does not look far outside of its own discipline and tends to hold a narrow scope. From Table 3 we can see that only five (out of 22) papers covered directly addressed all three dimensions of trust.

Table 3: Dimensional Concepts Identified in Literature

Author	Concepts Identified			Field of Research
	Dispositional Trust	*Institutional Trust*	*Interpersonal Trust*	
(Belanger et al., 2002)			X	IS focused
(Cardholm et al., 2000)			X	IS focused
(Cheung and Lee, 2001)	X	X	X	IS broad
(Dekleva, 2000)			X	IS focused
(Doney and Cannon., 1997)	*	X	X	Marketing
(Earp et al., 2002)			X	IS focused
(Gefen, 2002)			X	IS broad
(Hosmer, 1995)	X	X	X	Management
(Huberman et al., 1999)			X	IS focused
(Lee and Turban, 2001)	X	X	X	IS broad
(Lewis and Weigert., 1985)		X		Sociology
(Malhotra and Murnighan., 2002)			X	Management/ Psychology
(Mayer et al., 1995)	X		X	Management
(McKnight and Chervany., 2002)	X	X	X	IS broad
(Naquin and Paulson et al.,		X	X	Psychology

2003)				
(Nöteberg et al., 2003)			X	IS focused
(Ratnasingham and Pavlou., 2003)		X	X	IS focused
(Rousseau et al., 1998)	X	X	X	Management
(Tan and Theon, 2001)	*	X	X	IS focused
(Van Den Berg and Van Lieshout., 2001)			X	IS/ Accounting
(Wang et al., 1998)			X	IS focused
(Yoon, 2002)	*	*	X	IS focused

* Concept indirectly addressed and/or acknowledged

From the literature covered, only six articles directly (and three indirectly) addressed the individuals Disposition to Trust. This indicates a large gap in the research into trust, as the consumers themselves are being overlooked. The disposition to trust is fundamental in the formation of trust, as if the individual holds a low disposition to trust, they find it hard to develop a sense of trust in general and therefore would likely find it difficult to trust an online retailer.

Ten articles acknowledged trust at the institutional level and one did so indirectly. This also presents additional research opportunities as the institutional or sociological viewpoint has been somewhat overlooked by trust research.

As expected, all except one article addressed the interpersonal trust dimension, the one that did not was a sociology based article which held a highly focused view (Lewis and Weigert., 1985). Also noteworthy is the sole focus of the majority of Information System literature, which often only addressed a single dimension of trust. This viewpoint is usually focused on the issues surrounding online consumer privacy and transactional security. As noted by Gefen (2002), by addressing trust automatically as a one-dimensional construct the researcher may be oversimplifying the problem and therefore failing to address the issue of trust as a whole.

CONCEPTUAL TRUST MODEL

Now that a trust has been defined and explained, we can look to integrate the construct further into the electronic commerce arena to offer additional insights into the nature of trust online. From the review of the literature, Online Consumer Trust can be looked at as a three dimensional construct that encompasses the consumer (dispositional trust), the vendor (interpersonal trust) and the internet (institutional trust). These dimensions help explain the forces at work in electronic commerce, thereby illustrating that the consumer, the internet and the vendor all bring their own issues into the overall assessment of trust.

However within these dimensions themselves, there are additional inter-relationships which are indicated by the proposed model shown in Figure 1. From this we can form the view that dispositional trust is the primary foundation to the development of trust and the associated outcomes.
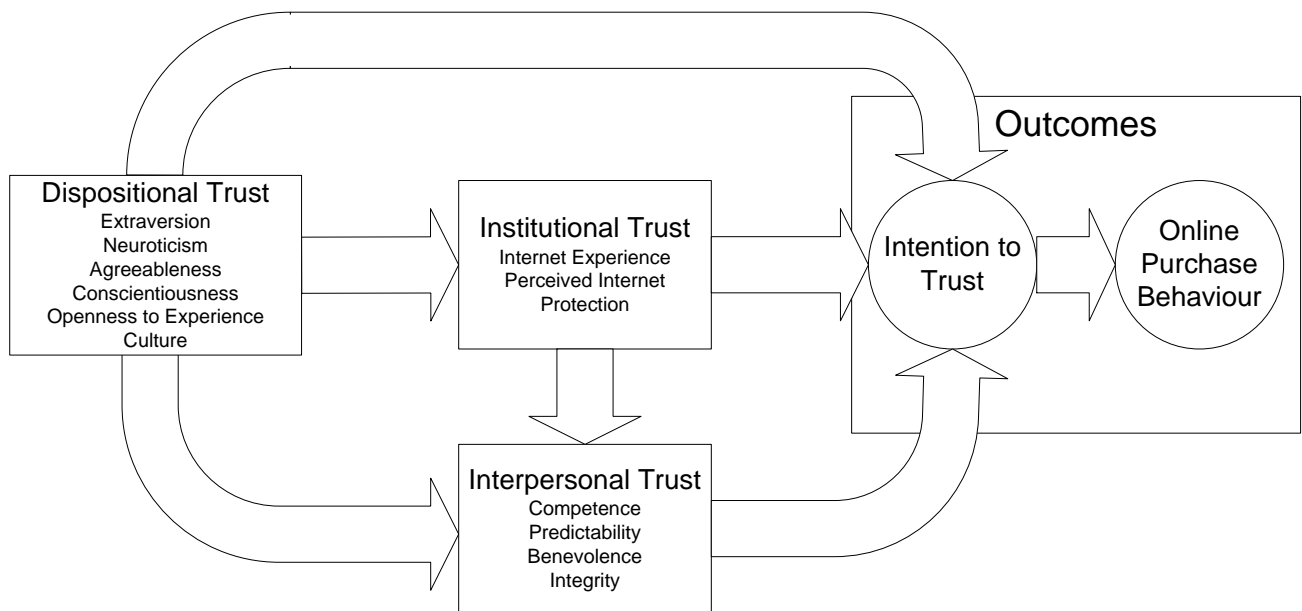

Figure 1: Multi-Dimensional Trust Model

Dispositional Trust

Dispositional trust refers to an individual's ability and willingness to form trust in general. This dimension is driven by the field of psychology, which describes dispositional trust as a personality trait that is formed through an individual's lifetime.

The individual firstly has their own upbringing and cultural issues which moulds their persona and their overall disposition to trust. If the individual typically finds it hard to trust in general, they are not likely to find the internet a comfortable place to conduct business due to the non-personal nature and the relatively high levels of trust required. On the other hand, an individual that finds it easy to trust will likely hold little reluctance in considering purchasing online. This disposition to trust could be looked upon as the necessary foundation in the formation of trust, as it is a prerequisite for the other dimensions of trust.

The concept of the personality is the subject of much debate amongst psychologists, but the five factor trait theory is one of the most accepted models (Costa, McCrae, & Dye, 1991; Goldberg, 1990, 1992; Olson & Suls, 2000). This model contends that an individual's personality can be described through five factors, those being: Extraversion, Neuroticism, Agreeableness, Conscientiousness and the Openness to experience.

Extraversion refers to the individual's level of focus on the outside world. Extraverted personalities are said to be socially outgoing and are generally more careless and quick to change views. From this personality trait we can propose that extraversion leads to a higher disposition to trust.

Neuroticism is described as encompassing emotional instability, pessimism, fear and low self-esteem (Olson et al., 2000). An individual holding a neurotic personality is likely to hold high levels of anxiousness and view themselves as vulnerable (Costa et al., 1991). From this research we take the view that a neurotic individual would likely find it difficult to trust in general, and form the proposition that neuroticism leads to a lower disposition to trust.

Conscientious personalities are said to be dutiful and responsible, always carefully deliberating situations and usually siding on the side of cautiousness. From this cautious deliberation we propose that conscientiousness leads to a lower disposition to trust.

Openness to experience is characterised by open-mindedness as opposed to conservatism and traditionalism (Costa et al., 1991; Olson et al., 2000). This open-mindedness leads individuals to accept new experiences. We therefore propose that openness to experience leads to a high disposition to trust.

From these five factors that are said to encompass an individuals personality, agreeableness is of particular importance as it is this aspect of the personality which is said to "influence the self-image and help to shape social attitudes and philosophy of life"(Costa et al., 1991). Agreeable personalities are said to hold an optimistic view of human nature and generally believe people to be honest, decent, and trustworthy.

It could also be suggested that culture also plays a part in the disposition to trust, as some cultures may be more trusting in general and therefore hold a higher disposition to trust. Research into the issue of culture is quite widespread, yet there is very little that addresses the issue in relation to the formation of trust. Much of the literature on culture builds on the work done by Hofstede (1980), which groups culture into two broad categories: those that are thought to be individualistic versus those that are seen as collectivistic cultures. These two groups are thought to act differently, think differently and most importantly in relation to work on trust, make judgements differently. For example, advertising messages emphasising personal benefits are most suited to those cultures that are individualistic, whereas a different focus of family benefits would be necessary to appeal to collectivist cultures (Han & Shavitt, 1994). It was found that in general, western countries were primarily individualistic, whereas East Asian countries tended to be more collectivist (Triandis, 1989). Taking these findings in account, it can be proposed that culture has an impact on the individual's disposition to trust, where collectivist cultures hold a lower disposition to Trust and individualistic cultures is the opposite.

Institutional Trust

Institutional trust takes into account the sociology viewpoint that trust is a social structure that is situationally constructed. This dimension draws on the idea of forming trust in the Internet as a whole, and therefore trusting the technology. If a consumer holds a fear of technology or the internet, they are likely to not look towards the internet as a shopping medium. It is therefore necessary to consider this viewpoint if we want to look to understand trust.

It is at this institutional level that the individual's perception of the regulatory, legal and technical environment comes to fruition (McKnight and Chervany., 2002). If the individual does not believe the internet offers adequate regulatory, legal or technical protection, they are unlikely to hold a high level of institutional trust in the internet as a

shopping medium. It is therefore proposed that perceived Internet Protection has an impact on the level of Institutional Trust.

The institutional dimension also needs to take into account the individuals Internet Experience as previous experiences carry considerable weight when making judgements about a situation. These experiences carry more significance than any assumptions an individual could make about a situation without experiencing it personally beforehand (McKnight and Chervany., 1998). If an individual is familiar with the internet and has used it on a regular basis, they are likely to hold a higher level of Institutional Trust in the medium than a person that has never used the internet before. It is therefore proposed that the Internet Experience increases the level of Institutional Trust and consequently, a lack of Internet Experience decreases the level of Institutional Trust.

As shown in Figure 1, it is proposed that Institutional Trust is reliant on Dispositional Trust, as if the individual has difficulty in forming trust in general it is likely they will also have difficulty in developing trust in the internet as a shopping medium.

Interpersonal Trust

Interpersonal Trust focuses on the trust formed in another specific party. In this case, it is the assessment by the consumer in regards to the trustworthiness of the electronic vendor.

As discovered earlier when covering the literature definitions of trust, the attributes of competence, predictability, benevolence and integrity are found to be the cornerstones of developing trust in another party. We therefore need to address these issues at the Interpersonal level, as this is the dimension in which trust is formed in a specific other.

In addressing competence, the consumer assesses whether the vendor has the appropriate abilities, skills and expertise to satisfy their needs. Predictability takes into account the vendor's perceived reputation for providing a consistent service. Integrity is the belief that the internet vendor will act in an honest fashion and adhere to an accepted set of principles or standards. When looking at benevolence, the consumer makes a judgement on whether the vendor is focused on making a fast profit or has the customer's best interests in mind.

Each of these attributes of Interpersonal Trust are measured by the consumer's impression of the internet vendor, drawn from previous experience or gathered from outside sources of information. These outside sources can take the form of friends and family that have shopped at the site before and relay their experiences, therefore transferring their assessment of trustworthiness to the consumer. It can also take the form of third party sites whereby internet users post feedback about particular vendors and shopping experiences. These third party assessments can prove a valuable trust builder in the online environment, as it provides the consumer with additional information that can help foster trust at this interpersonal level.

Online privacy and security issues are also evident in this Interpersonal dimension. The effectiveness of third party privacy and security seals of approval have been widely commented on (Belanger et al., 2002; Benassi, 1999; Dekleva, 2000). Such policies and third party endorsements have been found to have a positive effect on trust within this dimension enhancing the vendor's trustworthiness, particularly the attributes of integrity and competence. However, it is also important to note that the third party themselves must also be trusted by the individual before the trustworthiness endorsement can be transferable.

As seen in Figure 1, Interpersonal Trust relies on other dimensions of trust. Firstly, Dispositional Trust is necessary foundation, as if the individual has trouble forming trust in general they are also likely to find it hard developing trust in a specific party. It is therefore proposed that Interpersonal Trust is reliant on Dispositional Trust.

In turn, Institutional Trust is also thought to have an impact on Interpersonal Trust online. If the individual is inexperienced with the internet or does not believe there are adequate regulations protecting them online, their Interpersonal Trust assessment of the online vendor will also be affected. It is therefore proposed that Institutional Trust has a positive effect on the degree of Interpersonal Trust.

Overall Intention to Trust

The concept of Overall Intention to Trust is the outcome of the consumers online trust assessment, which takes into account the levels of Dispositional, Institutional and Interpersonal Trust. We can view this intention to trust as the

construct of trust in its fullest form, as it encompasses the multiple dimensions which are evident in the development of trust.

This overall intention is the willingness of the consumer to depend on the vendor. Relating this back to the definition of trust developed earlier, it is the willingness for the consumer to make themselves vulnerable to a particular internet vendor after they have taken into account the various aspects attributed within each dimension. It is proposed that this overall intention to trust takes into account Dispositional Trust, Institutional Trust and Interpersonal Trust.

Online Purchase Behaviour

Online purchase behaviour is the anticipated result of the Overall Intention to Trust. This behaviour however is not the sole result of the intention to trust, it also takes into account other factors such as relative price, speed of delivery and product availability which are all outside the scope of this paper.

In the context of electronic commerce transactions, this purchase behaviour depends on the consumer holding an Overall Intention to Trust the particular vendor, as if this overall level of trust is not evident, the consumer will likely shop elsewhere with a vendor they hold a greater degree of trust in. It is therefore proposed that online purchase behaviour depends on the consumer holding a level of overall trust (intention to trust) in the vendor.

DISCUSSION

The aim of this paper was to synthesise the current literature on trust from a broad range of disciplines and develop a model to better explain the underlying nature of the construct of trust. It is hoped that from this conceptualisation Information Systems researchers will recognise that trust in electronic commerce is not a simple single dimensional issue, but rather a broad and complex construct that operates on multiple dimensions.

A differing viewpoint was presented, whereby the individual consumer was seen to be the most central aspect. This is an important change in research perspective, as it is the consumer themselves that is making the trust based assessments and therefore it is the consumer that needs to be looked upon as the central figure in the electronic commerce environment. It is rare for this view to be taken, as typically literature on electronic commerce is written from the vendor's perspective, highlighting aspects that need to be taken to improve the success of an electronic commerce venture.

This consumer centric viewpoint does not mean that this research holds no value for ecommerce practitioners, as it is first necessary to comprehend the issue before we can look to adequately address it. Once this underlying nature of trust is fully understood, the focus can be shifted to developing methods for practitioners to address the aspects of consumer trust that are found to be influential.

By identifying the nature of trust and the dimensions involved, this paper has provided a conceptual foundation for future research into trust in electronic commerce. Now that the numerous definitions of trust have been synthesised and addressed, research can look to progress by adopting the definition provided by Mayer et al. (1995). This definition was found to be the most appropriate and also the most widespread classification, whereby trust was defined as the willingness of the consumer to be vulnerable.

Within the construct of trust itself, three dimensional elements were identified to have an impact on the overall intention to trust. From these dimensions and their interactions, 19 propositions were uncovered for future research. Table 4 summarises the research propositions formed from our conceptualisation of trust in the online environment. The relevant literature identified for each proposition is the theoretical grounding for each proposition.

Table 4: Future Research Propositions

Proposition	Relevant Literature	Previous Research
Dimension: Dispositional Trust		
Proposition 1: Extraversion leads to a higher Disposition to Trust.	Costa, McCrae, & Dye, 1991; Goldberg, 1990, 1992; Olson & Suls, 2000)	No
Proposition 2: Neuroticism leads to a lower Disposition to Trust.	Costa, McCrae, & Dye, 1991; Goldberg, 1990, 1992; Olson & Suls, 2000)	No
Proposition 3: Conscientiousness leads to a lower Disposition to Trust.	Costa, McCrae, & Dye, 1991; Goldberg, 1990, 1992; Olson & Suls, 2000)	No
Proposition 4: Openness to Experience leads to a higher Disposition to Trust.	Costa, McCrae, & Dye, 1991; Goldberg, 1990, 1992; Olson & Suls, 2000)	No
Proposition 5: Agreeableness leads to a higher Disposition to Trust.	Costa, McCrae, & Dye, 1991; Goldberg, 1990, 1992; Olson & Suls, 2000)	No
Proposition 6a: Consumers from collectivist cultures hold a lower Disposition to Trust. *Proposition 6b:* Consumers from individualistic cultures hold a higher Disposition to Trust.	(Han et al., 1994; Hofstede, 1980; Triandis, 1989)	No
Dimension: Institutional Trust		
Proposition 7a: Perceived Internet Protection increases the level of Institutional Trust. *Proposition 7b:* Perceived lack of Internet Protection decreases the level of Institutional Trust.	(McKnight and Chervany., 2002)	Yes
Proposition 8a: Internet Experience increases the level of Institutional Trust. *Proposition 8b:* Lack of Internet Experience decreases the level of Institutional Trust.	(McKnight and Chervany., 1998)	Yes
Proposition 9: Institutional trust is dependent on the consumer holding a Disposition to Trust		No
Dimension: Interpersonal Trust		
Proposition 10: The perceived Competence of the Internet Vendor increases the level of Interpersonal Trust.	(Belanger et al., 2002; Cheung and Lee, 2001; Doney and Cannon., 1997; Gefen, 2002; Lee and Turban, 2001; McKnight and Chervany., 2002; McKnight et al., 1998; Rousseau et al., 1998)	Yes

Proposition 11: The perceived Predictability of the Internet Vendor increases the level of Interpersonal Trust.	(McKnight and Chervany., 2002; McKnight et al., 1998)	Yes
Proposition 12: The perceived Benevolence of the Internet Vendor increases the level of Interpersonal Trust.	(Belanger et al., 2002; Cheung and Lee, 2001; Doney and Cannon., 1997; Gefen, 2002; McKnight and Chervany., 2002; McKnight et al., 1998; Rousseau et al., 1998)	Yes
Proposition 13: The perceived Integrity of the Internet Vendor increases the level of Interpersonal Trust.	(Belanger et al., 2002; Cheung and Lee, 2001; Doney and Cannon., 1997; Gefen, 2002; Lee and Turban, 2001; McKnight and Chervany., 2002; McKnight et al., 1998; Rousseau et al., 1998)	Yes
Proposition 14: Interpersonal Trust is dependant on an individual's Disposition to Trust.		No
Proposition 15: Institutional Trust increases the level of Interpersonal Trust formed.	(McKnight and Chervany., 2002; McKnight at al., 1998)	Yes
Outcome: Overall Intention to Trust		
Proposition 16: Dispositional Trust increases the Overall Intention to Trust.		No
Proposition 17: Institutional Trust increases the Overall Intention to Trust.		No
Proposition 18: Interpersonal Trust increases the Overall Intention to Trust.		No
Outcome: Online Purchase Behaviour		
Proposition 19: Online Purchase Behaviour is dependant on the consumer holding a level of trust (Intention to Trust) in the Internet Vendor.		No

The dispositional trust propositions look to cover a large gap in current trust research, as the individual consumers personality has not been previously represented in the literature. The addition of these personality traits however presents some problems in trying to empirically formulate the propositions into a quantifiable manner, as they are dealing with relatively high level concepts. The literature listed for the personality-based propositions is psychology based research whereby the five facets of the personality (Extraversion, Neuroticism, Agreeableness,

Conscientiousness and Openness to experience) were identified. Each of these five personality factors was proposed to have an impact of on the individuals ability to form trust in general (Dispositional Trust).

The propositions dealing with the effect culture has on an individual consumer's disposition to trust is also another area which is lacking in research. Cultural differences have been found in numerous examples between individualistic cultures as opposed to those from collectivistic cultures (Han et al., 1994; Hofstede, 1980; Triandis, 1989). From these differences collectivist cultures have been found to form tightly coupled groups, which may also mean that collectivist cultures have trouble forming trust in general (Dispositional Trust) compared to those individuals from individualistic cultures.

At the Institutional level, the ideas of perceived internet protection and the impact of internet experience and their association with trust have been previously identified but have yet to be empirically tested (McKnight and Chervany., 2002; McKnight at al., 1998). The dependency of Institutional trust on the individual holding a disposition to trust has not been previously identified or researched.

The Interpersonal dimension has been widely covered in trust literature, with the attributes of competence, predictability, benevolence and integrity and their impact of interpersonal trust being widely identified (Belanger et al., 2002; Cheung and Lee, 2001; Doney and Cannon., 1997; Gefen, 2002; Lee and Turban, 2001; McKnight and Chervany., 2002; McKnight et al., 1998; Rousseau et al., 1998) and even empirically tested (Gefen, 2002; Lee and Turban, 2001; Sirdeshmukh et al., 2002).

The conceptualised outcomes of the overall intention to trust and the online purchase behaviour have been touched upon in other contexts, but not in the domain of trust research. It is therefore necessary for further research to be carried out to explain how these outcomes are reached and the relationship they hold with each of the dimensions of trust. It was seen as important to break up the overall intention to trust and the online purchase behaviour, as trust is not the single issue that leads the consumer to purchasing. It was however proposed that the purchase behaviour is dependant on the consumer holding this intention to trust, as if they do not trust the electronic vendor they will likely shop elsewhere.

The propositions formulated provide direction for future work into the nature of trust in the electronic commerce environment. Few of these core dimensional relationships have been covered in previous research in the electronic commerce domain, meaning that some empirical testing will need to be carried out to assess the validity of the proposed impacts and relationships.

CONCLUSION

The importance of trust is the electronic commerce setting is widely acknowledged, yet the concept of trust itself is still the point of much confusion. Firstly, an agreement on the fundamental definition of trust has not been formed, which means that research can in fact be measuring different things depending on the viewpoint the researcher adopts. It was therefore necessary for a synthesis of the trust related literature to uncover the commonly identified attributes of trust that define the necessary foundations for trust. The attributes of competence, predictability, benevolence and integrity were uncovered from the literature and were later used to form the basis of interpersonal trust.

The concept of trust itself was defined as a "willingness to be vulnerable" on the part of an individual. This willingness was then proposed to be dependant on not only the singular interpersonal dimension that the majority of literature takes, but rather also encompassing the individuals own disposition to trust and there faith in the internet as a whole, as seen in the institutional dimension. These additional dimensions have not been widely covered in trust literature, as they have only recently emerged in a handful of articles.

The dimensions of trust were then conceptually modelled to illustrate the relationships and the underlying nature of trust as a complete construct, rather than a singular concept which is the view taken by the majority of ecommerce trust literature. This conceptual model can be used to assist the understanding of trust and also provide a foundation for future research into the construct of trust.

The conceptualisation also raised new research questions into the topic of trust in electronic commerce, presenting the idea that the individual's disposition to trust is a necessary prerequisite for the formation of trust in the online

environment. This disposition to trust not only has an impact on the overall level of trust, but is also necessary in the development of trust within the institutional and interpersonal dimensions. This viewpoint has not been raised in previous research, and therefore requires further study to validate. The dispositional trust dimension was said to embody an individuals personality traits and also their culture. Research from the field of psychology provided the groundwork for the five factors that are said to characterise an individual's personality and also the foundation for future research into this dispositional dimension.

New questions were also raised within the institutional dimension of trust, whereby the individual's internet experience and the amount of perceived internet protection were said to impact the level of institutional trust formed.

It is hoped that this research has helped remove some of the confusion surrounding the topic of trust in the online environment whilst also providing a foundation for future research. From this conceptualisation Information Systems researchers will hopefully recognise that trust in electronic commerce is not a simple single dimensional issue, but rather a broad and complex construct that operates on multiple dimensions.

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