Relationship between Trust, Perceived Risk and Behavioral Intention for Technology Acceptance in Banking Services

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Abstract
Consisting of many members empirical studies on internet banking services (IBS) adoption have focused on perceived risk or trust or behavioral intention; but rarely have they combined these concepts and used empirical evidence to investigate the relationship. This study aims to contribute to this field by looking simultaneously at the roles of trust, perceived risk, and behavioral intention on consumers’ IBS usage intention. An integrated model explaining the interrelationships among trust, perceived risk and behavioral intention is developed for technology acceptance and internet banking. The research was conducted on a sample of 432 young Chinese consumers who can be classified as IBS early adopters. The quantitative findings are enhanced by the analysis of extensive qualitative data providing unique insights into this market. Results indicate that there is a significant relationship between trust, perceived risk and that both are crucial in explaining the technology acceptance and internet banking behavioral intention. Furthermore, trust in the bank is fundamental not only to reducing risk perceptions of IBS in general but also to building trust in the banks’ competence in terms of IBS activity. This research adds value to existing studies of online banking, which largely focus on trust, risk and intention separately. In addition, it enables us to contribute to the current literature on the emerging Chinese IBS market, which is largely under-researched.

Keywords Trust, Financial risk, perceived risk, behavioral intention, Internet, Banking, Consumers, China, TAM

Introduction
Trust, perceived risk, and behavioral intention are pervasive concepts that influence consumer behaviour in the financial services sector. Whilst an extensive body of literature focuses on how either trust or perceived risk or behavioral intention influences consumers’ decisions regarding the use of the internet for general shopping or online banking, the relationship among trust, perceived risk, and behavioral intention is not always straightforward nor is its potential influence (see for a review on trust, perceived risk, and behavioral intention Corbitt et al., 2003; Featherman and Pavlou, 2003; Gefen and Straub, 2004; Littler and Melanthiou, 2006; Mukherjee and Nath, 2003; Yousafzai et al., 2003). Research has shown that “risk and trust are inseparable components in decision-making” (Morrison and Firmstone, 2000, p. 600). Researchers suggest that to place trust on a party involves risk-taking and behavioral intention in decision-making (Morrison and Firmstone, 2000). Deutsch (1960) identifies trust as an individual’s confidence in the intentions and capabilities of a relationship partner and the belief that a relationship partner would behave as one hoped. Mitchell (1999, p. 174) has suggested that “perceived risk is an antecedent for trust to be operative and an outcome of trust building is a reduction in the perceived risk and behavioral intention of the transaction or relationship”, trust can be used as a risk reliever. Therefore, trust, perceived risk, and behavioral intention should be studied simultaneously in situations such as financial services and banking, in particular where innovative technology (e.g. the internet) is used possibly increasing risk perceptions further. It is therefore perhaps surprising that many such investigations have not yet occurred. This research seeks to test an integrated model of risk, trust, and intention where perceived risk is conceptualised as an antecedent of trust, thereby hopefully enabling better prediction of customers’ attitudes and behaviours
in an emerging market. The financial and banking sector has been experiencing enormous change recently; the FSA has failed to regulate the industry and the result has negatively influenced consumers’ trust in the banking system. In the UK, trust in banks has dropped from 47 percent to 31 percent and greater regulation has been recommended (Bakker, 2009). The impact of such a shift in perception is pervasive as it opens up the issue of distrust globally. The lack of trust can influence the way in which consumers see banks and financial institutions and in particular consumers’ attitudes to new forms of service delivery via the internet. Internet banking services (IBS) not only allow customers to carry out a range of banking activities, such as managing bank accounts and transactions without leaving their desks (Weir et al., 2006), but is also a very cost-efficient way for banks to provide their customer services (Yakhlef, 2001). However, it has been noted that customer adoption of internet banking has not yet reached the level, which most banks would like to see (Calisir and Gumussoy, 2008). Common concerns are identified such as the performance and security of banking transactions, as well as the confidentiality of personal account data (Aladwani, 2001; Aldas-Manzano et al., 2009; Furnell, 2004). These concerns increase the level of perceived risk and behavioral intention which is further exacerbated by declining levels of trust in banks. To build profitable long-term relationships with consumers, financial institutions need to know how trust, perceived risk, and behavioral intention influence consumer’s behaviour. However, relatively little attention has been dedicated to investigate how both concepts contribute to consumers’ willingness to use IBS. Such integration provides us with a unique perspective on how the social construct (trust) and psychological concept (perceived risk) influence consumers’ IBS adoption. Perceived risk is identified as a major barrier, discouraging consumers from considering using banking services on the internet (Black et al., 2001). Social psychologists would argue that trust and behavioral intention may act as a major risk reducer to help overcome this barrier. This research explores the IBS market in an emerging country, China, and adopts an integrated lens through combining the concepts of trust and perceived risk. Given the huge growth potential of China (Worthington, 2003), and the paucity of other relevant studies (e.g. Laforet and Li, 2005), our objectives are:

- To identify the relative importance of risk dimensions in relation to IBS adoption by Chinese consumers.
- To examine the role of trust in relation to Chinese IBS adoption.
- To explore the relationships between risk, trust and intention within the current context.
- To suggest appropriate trust building strategies to encourage increased adoption of IBS amongst Chinese consumers.

TRUST

It is most frequently cited in the literature and one of the most common constructs investigated in relationship marketing studies (Samiee & Walters, 2003). Trust is central to the development of successful service relationships in business-to-business markets and for the achievement of customer loyalty (Rauyruen & Miller). In a business-to-customer environment, trust between parties is established very differently from business-to-business environments. In a business-to-customer context the relationship is often very short term and more transaction focused (Bennett & Barkensjo, 2005) unlike in business-to-business, where the relationships are of a long term. Benevolence requires being interested in the partners’ welfare by not taking actions that would have a negative impact on him. There is an emerging body of literature related to trust in e-commerce which is derived from traditional research on trust (Papadopoulou, Andreou, Kanellis, & Martakos, 2001). These studies contribute only partially due to the relative newness and complexity of this issue. Current literature in e-commerce offers very little insight about how trust is developed and maintained (Ndubisi & Wah, 2005). Trust plays an important role in electronic or traditional transactions, it is critical for establishing a long term business relationship, especially if partners are located in different places where rules and regulations vary, many partners often do not know each other and have less control over data while they are being transferred (Roy, Dewit, & Aubert, 2001).
PERCEIVED SECURITY

Consumers perceive a greater uncertainty when a transaction is carried out using the Internet and are very concerned about security in the online context (Casaló, Flavián, & Guinalíu, 2007). Perceived usefulness and ease of use may not accurately reflect the motivation of users of online applications under security threats. Using online applications under security threats is associated with risk. For this reason TAM was extended to include perceived security of using online applications. Consumers associate security risk with loss of money in cash or through credit cards (Aldás-Manzano, Lassala-Navarré, Ruiz-Mafé, & Sanz-Blas, 2009). Previous research in countries with different levels of e-commerce adoption shows that perceived security risk is an important predictor of Internet banking adoption.

Behavioral Intention

Behavioral intention (BI) is defined as a person’s perceived likelihood or “subjective probability that he or she will engage in a given behavior” (Committee on Communication for Behavior Change in the 21st Century, 2002, p. 31). BI is behavior-specific and operationalized by direct questions such as “I intend to [behavior],” with Likert scale response choices to measure relative strength of intention. Intention has been represented in measurement by other synonyms (e.g., “I plan to [behavior]”) and is distinct from similar concepts such as desire and self-prediction (Armitage & Conner, 2001). Ajzen (1991) argued that BI reflects how hard a person is willing to try, and how motivated he or she is, to perform the behavior.

Technology Acceptance Theory (TAM)

Davis (1989) developed technology acceptance model (TAM) which has become one of the most cited model in information systems research. TAM states that user adoption of a given information system can be explained by the users’ intention to use the system, which in turn is determined by the users’ beliefs about the system. The model assumes that attitudes about a system (operationalized as “perceived usefulness” and “perceived ease of use”), will impact the motivation (intention) to use a system, which in turn leads to actual usage. The model maintains that technology acceptance is determined by the users’ perceived ease of use, which is the degree to which a user believes that using a new information system would be free of effort; and perceived usefulness, which is the degree to which a user believes that using a new information system would enhance task performance. These two determinants in turn affect the users’ attitude toward using the information systems. TAM concepts are suitable for online service systems research since these systems are driven by information technology. The independent construct of TAM are perceived ease of use and perceived usefulness while the dependent constructs are behavioral intention to use and system usage. One of the limitations of TAM is the assumption that the user is not contained by any factors such as personal ability to use the system, lack of time, organizational issues, or environmental constraints. The TAM has been used and modified by several studies and has been proved to be a reliable predictor of a person’s acceptance of information technology (Gefen et al. 2003; Wang 2003; King and He 2006). With respect to Internet usage, Chen et al. (2002) equate usefulness to consumers’ perceptions that using the Internet will improve their shopping and information-seeking experience, while ease of use refers to the amount of effort involved in online shopping such as in clarity and navigation on the Web pages.

Why need to integrate?

The rapid increase in internet based services has also attracted an increasing number of misleading and fraudulent practices over internet (Baker, 1999). During the last few years, these internet-based attacks have been increased tremendously against users and e-commerce systems. Researchers (So and Sculli, 2002; Rotchanakitumnau and Speece, 2003; Cheng et al. 2006; Littler and Melanthiou, 2006) have highlighted many cases of the theft or fraud, breaches of personal privacy and attacks by hackers. Since internet based services are operating in an open environment, their applications and outcomes are vulnerable to security threats such as phishing activities, malwares,
spywares, spoofing, and password-sniffing, etc. (Vivo et al., 1998). However, the amounts at stake, and the buyer’s subjective assessment of the chances of an unfavorable consequence, determine the total amount of risk in any purchase decision (Dowling and Staelin, 1994). Some researchers have argued that online services involve more risk than any other traditional transaction services (Tan, 1999; Martin and Camarero, 2008). Therefore, when someone uses online services such as internet banking, his personal security may also be jeopardized. Though, there is plethora of research available on role of perceived risk in affecting the individual behavior towards internet banking use (Cheng et al., 2006; Gerrard and Cunningham, 2003; Jayewardene and Foley, 2000; Littler and Melanthiou, 2006; Manzano et al., 2009; Sathy, 1999; Suganthi et al., 2001); there is scarcity of studies which have focused on technology acceptance model (refer to Table I). So, we have made an attempt to integrate perceived risk with TAM. Table I clearly highlights that in spite of extensive empirical support existing TAM is not addressing the perceived risk element, which has been identified as an important element of diffusion of innovation literatures.

<table>
<thead>
<tr>
<th>Diffusion of innovation models</th>
<th>Technology acceptance model (TAM)</th>
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<tbody>
<tr>
<td>Observability (Rogers, 1962)</td>
<td>Perceived usefulness (Venkatesh, 2000)</td>
</tr>
<tr>
<td>Perceived risk (Ostlund, 1974)</td>
<td>Not addressed</td>
</tr>
<tr>
<td>Societal issues (Black et al., 2001)</td>
<td>Subjective norms (Venkatesh and Bala, 2008)</td>
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Table I. A comparison of various elements of diffusion of innovation with TAM

Hypotheses and model development

TAM posits that the effect of external influences such as system design characteristics and individual differences on the user’s intention is mediated by his/her perception about easiness and usefulness of the new system (Davis, 1986). (have been done in organizational setting, it will be interesting and worthwhile to see if their findings can be confirmed in a consumer setting like acceptance of internet banking services.

**Perceived usefulness**

Nevertheless, the TAM has been chosen in this study to understand the customers’ acceptance of internet banking technology. In the context of user acceptance of internet banking services, perceived usefulness could be because of transactions like online request for cheque/demand draft, sending monthly e-statements, online payments, etc. that improves performance, saves time and increase effectiveness of service or some or several add-on benefits such as bill payments, mobile recharge, etc. These benefits are also expected to be further enhancing over a period of time through technological advancement or breakthrough. Many researchers have empirically proven that perceived usefulness exert a significant and positive effect on attitude towards using IT or associated systems (Venkatesh and Bala, 2008; Davis, 1989; Venkatesh and Davis, 2000). So, we hypothesized that perceived usefulness has a significant impact on individual behavioral intention to use internet banking services:

H1. Perceived usefulness has a positive and significant impact on individual behavioral intention to use internet banking services.

**Perceived ease of use**

Perceived ease of use is conceptualized as an individual’s assessment of the mental effort involved in using the new technology (Davis, 1989). Venkatesh (2000) found several determinants of perceived ease of use by integrating internal control (computer self-efficacy) and external control (facilitating condition) into TAM. Various other studies (Davis, 1986, 1989) also pointed that perceived ease of use
can influence perceived usefulness because other thing being equal the easier the technology is to use the more useful it can be. In the context of internet banking, research shows that perceived ease of use has a positive and significant effect on perceived usefulness (Philips et al., 1994; Wang et al., 2003). Thus, customers are more likely to accept the internet banking services if there is ease of use in operation/process which can be instrumental to the utilization of technology and contribute to the individual by reducing transfer costs and improving work performance:

H2. Perceived ease of use has a positive and significant impact on perceived usefulness to use internet banking services.

H3. Perceived ease of use has a positive and significant impact on behavioral intention to use internet banking services.

Perceived risk
Bauer (1960) has defined the perceived risk in terms of the uncertainty and unfavorable consequences associated with consumers’ expectation. It reflects the consumer’s perception about the uncertainty of outcomes that pertain primarily to searching and choosing information of product and/or services before making any purchasing decision (Cox, 1967). Perceived risk plays an important role of catalyst in many online financial transactions (Ndubisi and Sinti, 2006; Rotchanakitumnuai and Speece, 2003). If the customers find any difference in their actual buying experiences and buying goals, they will perceive higher risk and in turn that perceived risk would be dependent on the degree of subjective uncertainty of outcomes. In online services, the spatial and temporal separation between consumers and e-retailers and the unpredictability of the internet services generate an implicit uncertainty around online transactions (Al-Gahtani, 2011). It has been found that threats of hacking and phishing attempts can push users to opt out of various forms of participation in the internet based services such as providing personal and sensitive information to web sites (Gerrard et al., 2006; Ndubisi and Jantan, 2003; Nor and Pearson, 2008; Polasik and Wisniewski, 2009). The perceived risk associated with online transactions may reduce perceptions of behavioral and environmental control, and this lack of control is likely to negatively influence transaction intentions. However, consumers are likely to transact online if their risk perceptions about behavioral and environmental uncertainties are alleviated, so that they gain control over their online transactions. The theory of reasoned action predicts that consumers would be willing to transact if their risk perceptions were low. Thus, we hypothesize that:

H4. Perceived risk has a negative and significant impact on behavioral intention towards use of internet banking technologies.

Social influences
Social influence on technology acceptance behavior has been widely acknowledged. Most of the previous works have emphasized on subjective norm to understand the essence of social influence, but they have got mixed results and its effect on technology has also been inconsistent. Venkatesh and Davis (2000) have found that social influence has only a significant impact on technology adoption under mandatory settings, and also that its effect moderates as users begin to have direct experiences with the target system. In addition, several researchers such as Conner and Armitage (1998) and Terry and Hogg (2000) have disagreed that the construct has limited conceptualization because it emphasizes only on the normative part of societal beliefs as opposed to wider societal contexts. Therefore, researchers have expressed the need to further articulate the link between social influence and technology acceptance (Matheison, 1991; Karahanna and Limayem, 2000). Whereas there is a direct relationship between subjective norm and intention in TRA and TPB is based on compliance, TAM2 encompasses two additional theoretical construct: internalization and image (Venkatesh and Davis, 2000). In the present context, if a family member/friend/colleague recommends that use of internet as a banking channel might be useful, a person may also believe that it is actually useful, and in turn form an intention to use it. Research has shown that individuals are very receptive to social normative influences to ascertain or maintain a favorable image within a reference group. Drawing inferences from these two related concepts, we hypothesized that social influences will affect the individual intention to use internet banking services. Thus we hypothesized that:
H5. Social influences have a positive and significant impact on an individual behavioral intention to use internet banking services.

H6. Social influences have a positive and significant impact on individual perceived usefulness of internet banking services.

Varadarajan and Yadav (2002, p. 297) have defined the e-marketplace as “a networked information system that serves as an enabling infrastructure for buyers and sellers to exchange information, transact, and perform other activities related to the transaction before, during, and after the transaction”. Hence we hypothesize that:

H7. Positive social influences have a negative and significant impact on perceived risk of using internet banking services.

Perceived behavioral control
In addition to attitudes and subjective norms (as suggested in Theory of Reasoned Action), theory of planned behavior introduces the concept of perceived behavioral control, which originates from Social Cognitive Theory (Bandura, 1977). Bandura (1982) has decomposed these behavioral beliefs into two distinct constructs: self-efficacy and outcome expectancy. He defined self-efficacy as the individual belief about his or her capability to perform in a certain manner to attain certain goals (Bandura, 1977, 1982). The outcome expectancy refers to a person’s estimation that a given behavior will lead to certain outcomes. Recently, in their integrative model, Fishbein and Cappella (2006) have found that both self-efficacy and perceived behavioral control are same. Moreover, they also suggest that perceived behavioral control can also be assessed by same items of self-efficacy.

In IT usage context, self-efficacy can be conceptualized as computer self-efficacy (Venkatesh, 2000). Various studies (Ndubisi and Jantan, 2003; Taylor and Todd, 1995; Venkatesh and Davis, 1996; Venkatesh and Davis, 2000; Wang et al., 2003) have empirically supported the causal flow from computer self-efficacy to technology-specific perceived ease of use and also from computer self-efficacy to perceived ease of use of internet banking technology in IT context (Wang et al., 2003). Thus we hypothesize that:

H8. Perceived behavioral control has a positive and significant impact on perceived ease of use.

Web site design
In internet banking services, users interact with the bank web site to perform their transactions and thus the web site provides a platform where customers can perform a series of actions to complete their transactions successfully (Alhudaithy and Kitchen, 2009). If the web site interface is poorly structured, lacks security and clarity or includes noise and distortion then transaction may be adversely affected (Ganguly et al., 2009). Ideally, web site should provide content information clearly in such a way that is simple to navigate and has low level of complexity. It has been found that the perceived ease of use also determined on the internet banking web sites features such as web site connectivity, clarity of instructions, speed of upload and download, etc. i.e. as internet bank services gives advantages to their consumers by allowing the customers to access their banking accounts from any location and at any time of the day (Agarwal and Venkatesh, 2002; Ndubisi and Sinti, 2006). So, we hypothesized that:

H9. Well-designed web site has a negative and significant impact on perceived risk to use internet banking technologies.

H10. Well-designed web site has a positive and significant impact on perceived ease of internet banking technology use.

Trust
Trust has been conceptualized as “trustor’s cognitive beliefs that results from observing the trustee’s action, and attributing the cause of the behaviour to the trustee’s internal trust-related characteristics” (McKnight et al., 1998). But several researchers such as Komiak and Benbasat (2004) have viewed trust from the emotional point of view and defined as the extent to which an individual feels secure and confident about relying on the trustee. Ennew and Sekhon (2007) have defined the trust as
“individual’s willingness to accept vulnerability on the grounds of positive expectations about the intentions or behavior of another in a situation characterized by interdependence and risk.” This definition combines both the emotional as well as cognitive dimensions of trust. Therefore, consumer trust could be described as a function of the degree of risk involved in the situation and it is basically needful only in uncertain situations. Trust has also been shown to reduce the risk of being taken advantage of by e-vendor in online transactions (Yousafzai, 2010). Whereas research focuses on the relationship among trust, risk and intention the trust literature and empirical evidence predominantly focus on industrial relationships, but theoretical and empirical validation in B2C e-commerce is scarce. Indeed, Jarvenpaa et al. (2000) extended the inter-organizational trust literature into consumer behavior in order to show that trust in an internet store reduces the risks of buying from that store. Trust in e-commerce reduces behavioral uncertainty and related risks associated with the possibility that an e-retailer might behave opportunistically. When people trust others, they assume that those they trust will behave as expected, reducing the complexity of the interaction. Consumers tend to assume that a trusted e-retailer will not engage in opportunistic behavior. Thus trust reduces the perceived risk. When an e-retailer can be trusted to show competence, integrity, and benevolence, there is much less risk involved in interacting with it. Moreover, a trusted e-retailer can be expected to take steps to reduce environmental uncertainty and related risks associated with the internet infrastructure, reducing the environmental risk associated with a focal transaction. In general, trust improves the consumer’s beliefs about e-retailer and the associated infrastructure, attenuating the perceived level of risk associated with the transaction process (Yousafzai, 2005, 2009). Hence, trust reduces the risk involved in transacting with e-retailer. Thus, trust in an e-banking institution reduces risk beliefs about on-line banking transactions with that e-banking institution (see Figure 1). Hence, we hypothesize that:

H11. Trust has a negative and significant impact on perceived risk to use internet banking technologies.

![Figure 1 Research model](image)

**Literature review**

All trust, perceived risk, and behavioral intention are defined as multidimensional constructs that are related to the individual, cultures and contexts (Gefen and Straub, 2004; Mayer et al., 1995; Mitchell, 1999). The perceived-risk literature clearly demonstrates that absolute certainty is essentially unheard of in consumers’ daily decision-making processes (Cunningham, 1967). This also reflects Bauer’s (1967, p. 24) proposition that “consumer behaviour involves risk in the sense that any action of a consumer will produce consequences which he cannot anticipate with anything approximating certainty, and some of which are likely to be unpleasant.” This clearly implies that any decision-making involves some kind of risk and consumers have to cope with risk on a day-to-day basis (Jacoby
and Kaplan, 1972; Roselius, 1971). Trust is not as clearly defined in the literature. However, Mayer et al.’s (1995, p. 172) define B2B trust as “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trust or, irrespective of the ability to monitor or control that other party”. This definition reflects an element of risk: to place trust in another party’s behaviour involves risk, particularly as such a belief involves uncertainty as the trustor is unable to confirm his/her decision outcomes prior to performance (Doney et al., 2007). Three dimensions of trust – benevolence, integrity and competence – have been examined in various contexts including electronic banking when examining the placing of such trust (e.g. Yousafzai et al., 2003). As identified earlier, most research studies on IBS adoption have looked at trust and risk separately, see Table2. As can be seen, the trust perspective seeks to subsume risk. However, without a clear distinction between trust and perceived risk, detecting their relationship is problematic. Thus, a more precise framework is needed and this research seeks to develop such a framework, which can be tested. This will also then contribute to those

<table>
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<tr>
<th>Context</th>
<th>Authors</th>
<th>Major findings</th>
<th>Potential issues</th>
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<tbody>
<tr>
<td>Perceived risk perspective</td>
<td>Aldas-Manzano et al. (2009); Black et al. (2001);</td>
<td>Higher levels of perceived risk discourage consumers from banking online</td>
<td>The importance of trust is not explicitly acknowledged. The relationship between trust and risk is underspecified</td>
</tr>
<tr>
<td></td>
<td>Cunningham et al. (2005); Featherman and Pavlou (2003); Littler and Melanyhiou (2006)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust perspective</td>
<td>Kassim and Abdulla (2006); Mukherjee and Nath (2003); Rotchanakitumnuai and Speece (2003); Suh and Han (2002)</td>
<td>Perceived risk considered to be a dimension of trust</td>
<td>Trust and risk have been identified at context dependent and as distinctive constructs (Halliday, 2003; Harridge-March, 2006)</td>
</tr>
<tr>
<td>Risk and trust Perspective</td>
<td>Kim and Prabhakar (2004); Yousafzai et al. (2003)</td>
<td>Risk and trust are suggested to be tested simultaneously</td>
<td>Trust is a significant antecedent of perceived risk.</td>
</tr>
<tr>
<td>Risk, trust, and intention</td>
<td>Tao Zhou (2010), Anita Lifen Zhao (2009) and Ankit Kesharwani (2011)</td>
<td>Risk, trust, intention are suggested to be tested simultaneously</td>
<td>A significant relationship between trust, perceived risk and that both are crucial in explaining the technology acceptance and internet banking behavioral intention</td>
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<td>perspective</td>
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Table II. A snapshot of recent IBS adoption studies

- Studies that have attempted to examine the constructs simultaneously, where there has been limited empirical work in the main. Furthermore, given that little research has been done in the Chinese context, and that this lack of up-to-date knowledge has been well documented (Laforet and Li, 2005) the research also make a contribution in developing an understanding of this developing market. Given the importance of the market and its potential for banks’business expansion, an insufficient understanding of the context can lead to strategic failure. As the literature does not provide us with clear guidance (Mayer et al., 1995, p. 711), it is of managerial importance for banks (international ones in particular) to understand whether perceived risk is an antecedent of trust or should trust be considered as an antecedent of perceived risk. Clearly, the relationship among risk, intention, and trust could be interwoven, especially when the trustor has to deal with uncertainty or what are perceived to be uncontrollable factors such as the internet, which as a technology has the potential to fulfil or break the bank’s promises (Yousafzai et al., 2003). Understanding this relationship can help bank managers...
better predict consumers’ IBS adoption and provides useful guidelines to reduce risk and enhance trust. A number of relationships have been summarised based on previous work (Lim, 2003):

- Perceived risk acts as a mediator between trust and willingness to buy (Stuart, 1999 as cited in Lim, 2003).
- Three of them perceived risk and trust have a direct impact on trusting behaviour (Kim and Prabhakar, 2000).
- Trust, behavioral intention have an impact on perceived risk (Cheung and Lee, 2001 as cited in Lim, 2003).
- Perceived risk, trust, and behavioral intention are dependant on each other (Mitchell, 1999).

In line with Mayer et al.’s (1995) proposition on placing trust in a party (or a company) and trusting behaviour, in our context, this implies two assumptions: the respondents will assume a risk exists when deciding to use IBS and they will take the risk when they decide to trust in their bank’s ability to deliver on its IBS promise.

**Conceptual trust-risk-intention model in IBS**

The preceding discussion leads us to hypotheses development within the current context. Here trust, perceived risk, and behavioral intention are shown as distinctive, though connected constructs, with trust influencing the degree of perceived risk. In addition, the issue of “competence” is identified as the result of trust and in itself then has the potential to influence perceived risk. This relationship helps underscore the potentially complex interplays at work in such investigations. It also presents one possible interpretation of the issues detailed in the literature and provides an initial concept for confirmatory testing.

The literature suggests that when considering whether or not to adopt the internet as a marketing channel, the more risk a consumer perceives, the less likely he/she will buy online (Forsythe and Shi, 2003). Thus, the first hypothesis states:

**H1.** Consumer perceived risk in online banking negatively influences their usage intention.

Two types of trust are important when investigating the adoption of online banking: **trust in the bank and trust in the e-channel** (Stewart, 1999). Approaches such as being loyal to a brand or a service provider that is known and can be trusted are commonly used, especially in online contexts where the interaction between buyers and sellers is low (Chen and He, 2003; Huang et al., 2004). Online banking is delivered by a financial institution rather than an individual, thus, consumers’ trust in a bank is expected to be predominant. Trust in banks in a general context is an antecedent of perceived risk because account holders will not put themselves into a vulnerable situation if there is a lack of trust or the bank cannot be trusted. Northern Rock is a good example. After the media exposed its financial crisis (BBC, 15 September 2007), the bank’s account holders’ confidence was devastated and many...
chose to queue up to withdraw their money. This clearly demonstrates that trust in a bank is a vital element in relation to financial services. This notion is supported by Yousafzai et al. (2003) who propose that in online banking, less risk will be involved when the bank can be trusted.

H2. Consumer trust in the bank reduces their perceived risk related to the online banking services.

Furthermore, trust in banks’ competence in delivering IBS is contextualised and this belief may be an outcome of trust in a bank more generally. Trust in a bank’s competence is transferred to the channel – the internet – through which banks deliver financial services and keeps their IBS promises. However, the internet is open to the public and banks have no ownership or control of the channel. Consequently, it is reasonable to propose that consumers need to be willing to trust in the banks’ competence in delivering IBS, in order to decrease their risk perception. Thus, it is expected that consumer trust in banks will be positively related to their trust in the bank’s competence in delivering IBS and simultaneously be inversely related to risk perception regarding the IBS system. This leads to the following hypotheses:

H3. Consumer trust in the bank’s competence to provide online banking services reduces their online banking risk perception.

H4. Consumer trust in the bank has a positive effect on perceived competence to provide online banking services.

Based on Mayer et al. (1995), it is expected that when consumers’ trust in banks is sufficient and exceeds their risk perceptions in relation to IBS, consumers will be more likely to adopt IBS. Research has shown that a significant link exists between trust in the e-channel and the adoption of internet banking (Kim and Prabhakar, 2004). Thus, this leads us to suggest:

H5. Consumer trust in the banks’ ability to provide online banking services has a positive effect on usage intention.

Methodology

Research design overview

This research was undertaken in two stages combining quantitative and qualitative approaches. Using a self-administered questionnaire, the quantitative design enables an in-depth examination of Chinese consumers’ perception of risk and trust. This also allows us to explore the underlying relationship between risk, trust and consumers’ usage intention. The questionnaire was pilot-tested and some semantic changes made. to such sample (Cui and Liu, 2000; Dickson et al., 2004; Lu et al., 2005; Roy et al., 2001; Walters and Samiee, 2003). To address these issues, adopting a convenience sampling was deemed practical. The final version of the questionnaire was distributed to four universities in Guangdong Province. The sample covers a wide range of students (one highly competitive university, two local universities and one polytechnic college). This selection method helps avoid Quantitative research and sample A convenience sample of Chinese university students was considered appropriate. These consumers inherently have great potential to adopt technological or innovative products such as IBS; being young and familiar with computers as well as the internet. This group of consumers could be identified as a group of IBS early adopters in China. Also, university students are suitable for concept development (e.g. Alturas and Santos, 2004; Dholakia, 2001; Featherman and Pavlou, 2003; Laroche et al., 2003). Finally, challenges have been identified when implementing primary research in China, for example the difficulty of defining a meaningful sample of “Chinese consumers” and the access potential bias due to non-probability sampling and achieves a balance between the difficulty of defining a representative sample and the use of a convenience sample. In total 900 students were contacted. A total 504 out of the 836 returned responses were completed, a completion rate of 56 per cent, this rate was achieved by using an in-lecture distribution and collection strategy. Among these valid responses, there are 490 internet users (97.2 per cent) and 14 non-users (2.8 per cent). Most of the internet users are currently IBS non-users (88.2 per cent) and only a few of them state that they are IBS users (11.8 per cent). The group of current IBS non-users is eligible and form the sample for this research (n = 432). Most respondents are young (99.1 per cent are 18-25) and the sample is reasonably evenly divided between the genders with 186 males and 246 females (43.1
per cent and 56.9 per cent respectively). Whilst the use of a student based sample is appropriate, it must also be acknowledged that this does limit the generalisability of the findings and therefore acts as one of the study’s potential limitations.

Scale development
Perceived risk is defined as a concept composed of multiple dimensions and dual components. This means that risk has been measured in terms of uncertainty and consequences, which are then multiplied. Previous work has shown the validity of these components (Cunningham, 1967; Mitchell and Boustani, 1994; Verhage et al., 1990b) and are particularly recommended for examining risk in the service context (Boze, 1988; Guseman, 1981; Mitchell and Greatorex, 1993). Thus, the measure helps us maximise result comparability to existing the Western literature. In this study, the overall perceived risk was measured on a multidimensional scale covering security, performance, privacy and finance concerns. The decision is in line with previous research, which demonstrates that perceived risk in internet banking is mainly determined by these risks (Aldas-Manzano et al., 2009; Littler and Melanthiou, 2006; Yousafzai et al., 2003). Although conceptually risk dimensions are distinct, empirical studies also show that a number of these dimensions (such as psychological and social) are highly correlated and are combined as a single measure, depending on the context (e.g. Jacoby and Kaplan, 1972; Kaplan et al., 1974; Mitchell and Greatorex, 1993). This context-dependency implies that perhaps in reality, some risks are difficult for consumer to distinguish. Thus, in a different context it might be appropriate to combine some of the other risk dimensions if this helps to achieve a more meaningful discussion.

The items were derived from the literature (and where appropriate based on instruments previously used in the studies outlined above) and adapted to the current context on the basis of exploratory interviews (Corbitt et al., 2003; Featherman and Pavlou, 2003; Lim, 2003). These interviews where conducted at an initial stage and used simply to assist in the verification of the constructs to be included in the questionnaire. A four-point Likert scale was applied to the risk measures (1-4, “very certain” to “not at all certain” and “very serious” to “not at all serious”). This decision stems from previous studies on Western consumers (Cunningham, 1967) and cross-cultural settings (Hoover et al., 1978; Verhage et al., 1990a). Also, the scales were operationalised and found appropriate within service contexts (Mitchell and Greatorex, 1993). The components were multiplied to form a new scale for each risk variable (Yates and Stone, 1994). Before a detailed evaluation of the data, an exploratory factor analysis (EFA) was applied to the 13 risk variables to reveal the underlying dimensions of perceived risk in our context. An examination of the results indicates that the data is appropriate for EFA. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy exceeds, at 0.895, the recommended value of 0.6 (Kaiser and Rice, 1974) and Bartlett’s Test of Sphericity also reached statistical significance (p # 0:001) (Bartlett, 1954). In accordance with the Kaiser criterion, only those factors with eigenvalues greater than 1 were retained for further analysis (Hair et al., 2006). Three factors were identified explaining 56.3 per cent of the variance after Varimax rotation(Table III).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Statements</th>
<th>Control risk</th>
<th>System risk</th>
<th>Functionality risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>FinRisk 1</td>
<td>I will lose money</td>
<td>0.636</td>
<td>0.727</td>
<td>0.523</td>
</tr>
<tr>
<td>FinRisk 2</td>
<td>I will lose control of my bank account</td>
<td>0.636</td>
<td>0.727</td>
<td>0.523</td>
</tr>
<tr>
<td>FinRisk 3</td>
<td>My money loss will not be covered by the Bank</td>
<td>0.636</td>
<td>0.727</td>
<td>0.523</td>
</tr>
<tr>
<td>PrivRisk 1</td>
<td>Others will know my personal details</td>
<td>0.621</td>
<td>0.622</td>
<td>0.753</td>
</tr>
<tr>
<td>PrivRisk 2</td>
<td>Others will misuse my data</td>
<td>0.621</td>
<td>0.622</td>
<td>0.753</td>
</tr>
<tr>
<td>PrivRisk 3</td>
<td>I will lose control of my personal data</td>
<td>0.621</td>
<td>0.622</td>
<td>0.753</td>
</tr>
<tr>
<td>PerfRisk 2</td>
<td>IBS will not work as I expect</td>
<td>0.570</td>
<td>0.758</td>
<td>0.549</td>
</tr>
<tr>
<td>PerfRisk 3</td>
<td>The internet banking services will have technical problems</td>
<td>0.570</td>
<td>0.758</td>
<td>0.549</td>
</tr>
<tr>
<td>PerfRisk 4</td>
<td>I will have to be careful when I use IBS because I need to ensure I don’t make mistakes</td>
<td>0.570</td>
<td>0.758</td>
<td>0.549</td>
</tr>
<tr>
<td>SecRisk 2</td>
<td>Fake internet banking web servers may be</td>
<td>0.570</td>
<td>0.758</td>
<td>0.549</td>
</tr>
</tbody>
</table>
shown online 0.546
SecRisk 3 Internet banking systems can be attacked 0.751
PerfRisk1 IBS will not work properly 0.828
SecRisk 1 The internet banking system is not secure 0.808
% of variance explained 22.55 20.14 13.59
Initial Eigenvalue 5.11 1.16 1.06
Cronbach’s alpha 0.81 0.74 0.72

Notes: Extraction method: Principal Component Analysis, Rotation method: Varimax with Kaiser Normalization. Rotation converged in six iterations

Table III. Perceived risk dimensions
The first factor contains finance and privacy risk and is concerned with a loss of either money and/or personal details. It can thus be interpreted as “control risk”. The second factor is concerned with specific security and performance risks and is named “system risk”. The last factor comprises just two variables that relate to general functionality risks of IBS use and is thus called “functionality risk”. IBS is regarded as risky as it is difficult to ensure its operation especially as the respondents had no prior experience of using online banking. Lim (2003), for example, reported that in the context of online shopping respondents worry about technology as they have no idea about the seller, they are also concerned about whether a safe process is created and maintained for payment (these dimensions were also supported by the results of our qualitative research). Trust can be defined as a concept composing of integrity, benevolence and competence. These dimensions are often suggested to contribute to trust in the contexts of B2B (Mayer et al., 1995) and B2C (Gefen and Straub, 2004). The EFA conducted on the trust variables revealed two factors explaining 61.9 per cent of the variance (KMO $ 0.06, Bartlett’s Test of Sphericity # 0.000). The results are displayed in Table IV and show a clear division between trust in the institution and trust in the bank’s competence to provide IBS. This is in line with the literature (see Kim and Prabhakar, 2004; Stewart, 1999; Yousafzai et al., 2003). Nooteboom et al. (1997) broadly classify trust into competence and intentional trust. Furthermore, in the context of investigating the adoption of internet banking, competence trust is crucial for trust in the electronic channel, whilst trust in the bank providing IBS is intentional trust as the customer is vulnerable to consequences when engaging in trusting behaviour (Kim and Prabhakar, 2004).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Statements</th>
<th>Trust in Bank</th>
<th>IBS completeness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrity1</td>
<td>My bank is honest</td>
<td>0.859</td>
<td></td>
</tr>
<tr>
<td>Integrity2</td>
<td>My bank will keep the promise it makes</td>
<td>0.831</td>
<td></td>
</tr>
<tr>
<td>Benevolence1</td>
<td>My bank puts customers’ interest before its own</td>
<td>0.632</td>
<td></td>
</tr>
<tr>
<td>Benevolence2</td>
<td>My bank demonstrates its belief that “the customer is always right”</td>
<td>0.546</td>
<td></td>
</tr>
<tr>
<td>Competence1</td>
<td>My bank is competent in carrying out its online banking transactions</td>
<td>0.781</td>
<td></td>
</tr>
<tr>
<td>Competence2</td>
<td>My bank knows how to provide excellent IBS</td>
<td>0.840</td>
<td></td>
</tr>
</tbody>
</table>

% of variance explained 35.99 25.9
Initial Eigenvalue 2.603 1.111
Cronbach’s alpha 0.6 0.73

Notes: Extraction method: Principal component analysis, Rotation method: Varimax with Kaiser Normalization. Rotation converged in three iterations. Perceived-risk variables were adopted from Corbitt et al., 2003; Featherman and Pavlou, 2003; Lim, 2003 and our exploratory research;

Table IV Trust dimensions

Usage intention is measured on a single item scale asking respondents to indicate their likelihood adopting IBS. This measure was adapted from Phau and Poon (2000) and tailored to our context
Qualitative research
After the questionnaire distribution, participants were also invited to join focus group interviews. In total, 27 respondents took part in six mini-group interviews (three groups of males and three groups of females) and each lasted approximately 50-90 minutes. Guided by the literature, respondents were encouraged to discuss their reasons for not using IBS and to indicate their concerns in terms of China’s IBS development. The interviews were tape-recorded and fully transcribed. The qualitative design helps enrich the discussion of the quantitative results and explore information “masked” by the quantitative approach. A series of steps were applied to analyse qualitative data; including categorisation, data rearrangement and reduction, relationship recognition and additional categories formation (Rudestam and Newton, 2001; Saunders et al., 2003). Firstly, categorisation is used to understand the statements and establish meanings within our current context. The literature was used as the guide to “categorisation themes” and generate an overall picture of our respondents. Secondly, data was rearranged and reduced into a more manageable form, guided by the literature and the purpose of the research, to identify related ideas or discussions for broad theme development. Finally, relationships and additional categories were identified. This step was important to analyse the reorganised data and to generate key themes, patterns, or relationships. A number of “themes” in relation to China’s IBS were identified; these are reported after the results of quantitative data.

Results
The Structure Equation Modelling (SEM) approach was adapted to validate the proposed structural framework. This approach was chosen as it can explore and test simultaneous hypothesised causal relationships among multiple variables (Joreskog and Sorbom, 1979). Furthermore, SEM permits us to estimate the strength of interrelationships between our latent constructs (Gallagher et al., 2008). The data was analysed using AMOS Version 6. The model sought to validate the hypothesized relationships shown in Figure 3. Measurement reliability and validity of the final model was examined using confirmatory factor analysis (CFA). Behavioural intention as a single item measure was excluded from the CFA analysis. The initial model used for CFA led to the deletion of the following items: RiskPerf2 and Benevolence2 due to low loading estimates of below 0.5 (Anderson and Gerbing, 1988). Construct reliability of perceived risk and trust was tested using Cronbach’s Alpha. The final scales for “risk” and “trust in bank” demonstrate high internal consistency with Cronbach’s alpha values exceeding Nunnally’s and Bernstein’s (1994) recommendation of at least 0.7. The factor for “IBS competence” comprising only two items reached the level of 0.6, which is acceptable for exploratory studies. The final measurement model achieved an acceptable fit to the data on the basis of a range of commonly used fit indicators. As shown in TableV, the CFI, GFI and IFI values are all above 0.9. The RMSEA of 0.057 is below the 0.06 value thus indicating a good fit (see Hu and Bentler, 1995). Furthermore, the ratio of the chi-square value to the degrees of freedom was 2.395 and thus within the recommended range of 1 to 3 (see Carmines and McIver, 1981). We tested the proposed conceptual model (as shown in Figure 3) using SEM. The results indicate that the hypothetical model provided an acceptable fit to the data as demonstrated by the SEM model fit indices in TableV. Figure3 shows the structural path parameter estimates for the model. In relation to the hypotheses, perceived risk has a significant negative effect on behavioural intention to adopt IBS, supporting H1 (β ¼ 20:163, p , 0:05). Results also evidence the key role of trust in the institution on the usage intention of adopting internet banking. As we expected, the higher the trust in the institution the lower the perceived risk in internet banking (H2, β ¼ 20:384, p , 0:001). Furthermore, the results indicate that trust in the bank has a significant positive influence on the trust in its competence in operating IBS supporting H4 (β ¼ 0:444, p , 0:001). This competence in internet banking will then significantly increase the probability of adopting the internet as a banking channel (H5, β ¼ 0:133, p , 0:05)
Model fit indices

<table>
<thead>
<tr>
<th>Model fit indices</th>
<th>CFA model</th>
<th>SEM model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Squared (x 2)</td>
<td>258.7</td>
<td>282.5</td>
</tr>
<tr>
<td>Degrees of Freedom (df)</td>
<td>113</td>
<td>128</td>
</tr>
<tr>
<td>x 2/df</td>
<td>2.29</td>
<td>2.21</td>
</tr>
<tr>
<td>Probability level (p)</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Number of observations</td>
<td>432</td>
<td>432</td>
</tr>
<tr>
<td>Comparative Fit Index (CFI)</td>
<td>0.935</td>
<td>0.932</td>
</tr>
<tr>
<td>Goodness of Fit Index (GFI)</td>
<td>0.936</td>
<td>0.933</td>
</tr>
<tr>
<td>Incremental Fit Index (IFI)</td>
<td>0.936</td>
<td>0.933</td>
</tr>
<tr>
<td>Root Mean Squared Error of Approximation (RMSEA)</td>
<td>0.055</td>
<td>0.053</td>
</tr>
</tbody>
</table>

Table V. Model fit indices

It is interesting to note that respondents’ belief in the competence of the bank in carrying out IBS does not necessarily reduce their risk perceptions of internet banking. Therefore, hypothesis H3 is not supported (H3, p . 0:05). The quantitative results clearly demonstrate that trust in the bank is a key influence in persuading Chinese consumers to use IBS. Figure 3 shows that two pathways exist between trust in the bank and Chinese consumers’ intention to use IBS. First, by increasing trust in the bank it will reduce the perceived risk of IBS and thus positively influence the intention to use IBS. Second, through increasing the trust in the bank it will positively influence consumers’ perception of the bank’s competence in providing an IBS service which in turn will influence them positively towards the use of IBS. However, the lack of relationship between the perceived risk involved in using IBS and the perceived IBS competence may well be explained by the overall lack of trust that would have appeared to exist in the bank. This will be discussed further below.

Integrating the quantitative and qualitative results

The qualitative interviews revealed that there is a general lack of trust in the banking system. Of particular concern was how banks would deal with the situation when a customer encounters financial loss through using IBS. They were uncertain whether the bank would cover or compensate for any money loss. This uncertainty was particularly prominent with the female respondents:

I am not sure how banks will solve problems, particularly when money loss is involve (Female g1) Money loss is related to redress issues. The bank should follow my case [e.g. inquiry]. If it’s not my fault [i.e. I am not responsible for the loss] that I have lost account funds, banks should compensate me (Female Group 3).
In general, if the loss is small, then I wouldn’t worry that my bank would neglect my case [as] it is a big bank. But, if the loss is big, then I’m not sure what the bank will do (Female Group 2).
The last comment highlights the issue of “problem scale”. If a problem is small, the respondents do not view it as significant. However, when encountering a larger financial loss, they are much less confident in the bank’s response and the bank is seen as less trustworthy. This concern for money loss is also expressed by male respondents, but responsibility in such situations is, importantly, questioned. Of course I worry. Where shall I complain if anything goes wrong? I fear that my money may be stolen. What can I do? Where and who shall I report and complain to? The banks are owned by the government; banks launch this service. Shall I complain to the government? If I lost a large amount of money, what shall I do? Who is going to be responsible for the loss? The bank might say, ‘Well, it is your personal business. You decide to put your money into our bank. We have no knowledge about how you do it [i.e. use online banking]. You could be careless when you use the service so that others may access your account and steal your account information and password, then money loss etc. do you have any evidence to prove yourself?'” (Male Group 2). An old Chinese stereotype seemed to exist whereby banks are still perceived as being government owned and controlled, although in reality, many state-owned banks have become PLCs (e.g. Bank of China, Industrial and Commercial Bank of China). This link between the government and the banking system, which is, dissimilar to Western economic models, needs to be considered when establishing Chinese consumers’ trust-building strategies. The female respondents, interestingly, pointed out that they were not sure how they could show the banks that they were not responsible for the loss, something the male respondents did not consider. No evidence [e.g. payment receipt] can prove my online transactions [referring to IBS online payment]. I do not feel solid. I am not sure whether the money has been made or not. But, if you go to a bank, the proof [i.e. receipt] will be given [to you] . . . (Female Group 2). One of my interests – actually confusion – is how to gather evidence to prove/verify the online transaction that you have made if any conflict occurs (Female Group 2). Thus, as IBS involves no face-to-face interaction, this remote nature is related to observation and trust-building. When the respondents were probed further in an attempt to identify their understanding and knowledge regarding consumer rights and IBS regulation, three barriers were identified:

1. A lack of understanding regarding online banking users’ rights;
2. A perceived lower development of IBS in China when comparing it with IBS provided by international banks;
3. And, an unexpectedly low level of involvement by the government in regulating and monitoring the banking system.

When exploring the factors underlying this lack of trust in the bank, the qualitative research also supports the quantitative data and shows that there is a serious concern about security issues, namely hackers, computer viruses and the risk of logging onto a fake web site. I still feel [IBS] is not safe enough – hackers are just too smart nowadays. This is similar to the case that if you do not want to be attacked [online] by [a] virus, the only thing [that you could do] is not to use the internet. You can imagine how “secure” the internet is! And your online banking is sitting there [on the internet] all the time! (Male Group 2) I still have concerns regarding security. You know, the records of IBS are digital data. If there is anything wrong, anything could happen, e.g. data loss . . . (Male Group 3). . . . I don’t think [IBS] it’s perfect . . . IBS uses computers for [transaction] recording. I’m not quite sure whether my money would be “edited” by some kind of computer virus. If [the saving figure] is increased, that is good. But if it is decreased, then it is my loss. I will be very depressed and not sure what I shall do. What happens, if [the account] is attacked by hackers? They can remove my money [from the account] and I will have money loss. I still worry that when I use IBS, if somebody steals or knows my password, he/she can take my money [out of my account] straightaway, then I have money loss (Female Group 1). The quotations clearly show that IBS is seen as a high-risk service that contains several uncontrollable elements, any of which could lead to money and/or privacy loss. Furthermore, this perception of riskiness is exacerbated by the media, which report negative news on IBS security, systems and databases. This was summed up by one of the respondents when she commented: I am aware of the news that some people with professional computing knowledge use viruses to attack bank databases, access bank accounts, remove the funds in the account and change the data in the bank.
system (Female Group 3). All these individual elements of risk combine together to create a service that is perceived as high risk by Chinese consumers and this contributes to their lack of trust in both the banks and their internet Banking Services. Thus, appropriate and effective trust-building strategies in relation to both the bank and IBS are necessary for the successful growth of IBS in China. Initially, therefore, we need to consider alternative trust-building processes identified in the literature to help us develop suitable strategies before drawing our conclusions.

Discussion
It can clearly be seen from the evidence presented here that trust is a key issue in determining the future adoption rate of IBS in China. This trust, or lack of trust, directly links to the level of risk perceived by these potential IBS customers and relates to both trust in the bank, as well as trust in the internet banking channel. It is also worth noting that some gender differences exist, suggesting that the influence of trust and perceived risk need careful and specific consideration in relation to different possible customer groups. With this in mind, the importance of appropriate trust-building processes becomes critical to the future success of IBS in China. Three trust-building processes have been developed in the literature: calculative, predictive and identification (Lewicki and Bunker, 1995). The calculative perspective of trust was developed in economics (Williamson, 1997) and sociology (Coleman, 1990). It focuses on a process where costs and benefits of behaviour are rationally compared. More specifically, trust emerges when a bank customer perceives that a bank’s cost of cheating or engaging in opportunistic behaviour are greater than the benefit of such actions (Doney and Cannon, 1997). It has clearly been shown that opportunism is inversely related to trust – where opportunistic behaviour reduces the level of trust (Yilmaz and Hunt, 2001). In this context, cheating or opportunistic behaviour can also be displayed by those outside the bank’s control, but “privy” to the channel for example hackers. Here, the control of such activity is not entirely in the hands of the bank – and the question arises; do customers trust in the bank’s ability to circumvent cheating and opportunistic behaviour in others? The notions proposed in the calculative perspective centre on the assumption that the “entity” in which trust is to be placed is unitary, it has singular control of possible cheating and opportunistic behaviour. In terms of this research context this is not evident as the bank does not have full control, and must itself place trust in other factors to deliver the service. Perhaps, the only aspect where the bank does have control related to opportunism might be in terms of the management of systems of redress in the event that something did go wrong. The predictive basis of trust development involves the ability of individuals to predict the actions of others (Deutsch, 1960). The ability to predict behaviour comes from interaction with, and observation of, the other party (Lewicki and Bunker, 1995). Whilst the respondents have certainly interacted and observed the behaviour of their bank through the staff, they would have less knowledge and experience of the bank’s internet banking processes and would rely more on friend’s experience and the media. Here, whilst the respondents may well be familiar with the internet generally, many may not have bought online or managed services through this mechanism. There are also the predictions that customers might hold of their banks ability to effectively manage an online offer – perhaps raising concerns of bank competence within this operating environment. Interestingly, linked with the predictive basis of trust development, Tyler (1989) identified a number of factors that are positively related to the perceptions of fairness in interactions with authorities. One of these factors, “standing” refers to “the treatment accorded to people by group authorities . . . issues of politeness, respect for rights and treatment with dignity” (Tyler, 1994, p. 853). This would appear to be particularly relevant in this research context. Lewicki and Stevenson (1997) cited three factors related to the development of identification-based trust:
1. similar interests;
2. similar goals or objectives; and
3. common values and/or principles.

Whilst similarity of values is a good way to assess the fit or cultural blending of alliance partners (Das and Teng, 1998), value congruence is a central concern in gaining a successful fit between individuals
and organisations (Chatman, 1991). Indeed, Morgan and Hunt (1994) found that shared ethical values are positively related to trust in marketing relationships and dissimilarity of values and goals has been found to have a negative effect on trust development (Anderson and Weitz, 1989) and trustworthiness (Smith and Barclay, 1997). Different contexts involve different types of activities and distinct levels of interactions that may make certain bases of trust less applicable (Hagan and Choe, 1998). Different contexts, interactions and relational forms also have different types of risk and require different mechanisms to reduce risk (Sheppard and Sherman, 1998). Thus, it is likely that a bank personnel-customer interaction context should consider different trust building bases and risk levels than that involved in a bank-customer relationship mediated by the internet service. Indeed, current literature distinguishes between various bases for trust (calculative, predictive and identification), which occur from different types of interaction (Lewicki and Stevenson, 1997). For example, Koehn (1997) suggested that calculative trust development processes should be the main sources of trust in commercial exchanges, whereas, in channel relationships, opportunism may be the most important predictor of trust (Morgan and Hunt, 1994). There is perhaps additional complexity in this research context as trust development processes in relation to IBS exists in a “duality” borne out of the interwoven entity that is internet operation – organisation, legality, channel, monitoring and security systems. This leads to another potential risk – one of “ownership” – do customers trust in a “thing” (person, organisation or brand for example), if that singularity does not exist what does that mean for any of the possible bases for trust? This is perhaps an issue faced by those operating in “mediated” environments where the potential involvement of various external players might affect the delivery of the service in ways that would not be found in stand operational formats. In such complex situations gaining trust is a critical factor, but to do this banks must think beyond those aspects that are controlled and owned in terms of their own service delivery and widen consideration to include aspects brought through the channel itself and its particular characteristics. It is suggested that as trust in the bank is the pre-requisite of both pathways to increase the behavioural intention of using IBS, this should be the major focus of any trust-building strategies. However, in creating such trust-building strategies, they will inevitably be linked with the requirement of the IBS system. Thus, we suggest that banks have to publish a data protection policy, which has to be supported by the government as many consumers link bank ownership with the government, which is a uniquely contextual Chinese variable. Secondly, banks have to credibly demonstrate their willingness to refund financial losses incurred by internet banking users and to be accommodating in disputed cases. This is particularly important in dealing with female Chinese consumers. Finally, banks should guarantee that personal data are protected and not used against the wishes of the users and their anonymity is thus guaranteed.

Conclusions and future research
It is undoubtedly the case that the respondents lacked trust in the banks in China (or their ability to manage internet operations and this is particularly reflected in their concerns over how their bank would manage a serious financial loss by a customer). This is further confounded when technology is introduced to mediate this interaction, as in IBS, when additional issues of hackers and viruses become relevant. There is certainly a need for appropriate trust-building strategies to overcome this major barrier to IBS adoption. It is unclear whether the respondents felt the banks would act opportunistically and therefore calculative trust building strategies may not be appropriate, except perhaps in relation to redress strategies. Similarly, identification based trust-building strategies are more difficult to specify, although shared ethical values between customers and banks should raise levels of trust within the relationship. However, it is worth noting that the respondents were more inclined not to trust other people than to trust them, which may hint at their own behaviour. This leads appropriately to the predictive basis of trust development, which involves the ability of individuals to predict the actions of others. It is apparent from the data that the respondents felt that they could not predict the behaviour of the banks generally, and this exacerbated the problem, and increased the risk, in adopting IBS. This was further complicated by media stories involving hackers and computer viruses. The predictive basis of trust development involves customer interaction and observation of the bank staff. Perceptions of fairness are key and issues of “respect for rights and treatment with dignity” (Tyler, 1994) are
customer priorities if trust is going to be built by the banks – a pre-requisite for successful IBS adoption by customers. Until banks can convince the customers that their behaviour will be in the best interest of the customer, and this is predictable, trust will remain at a level where IBS adoption will be perceived as too risky. It would appear that currently, there is still some way to go before Chinese consumers engage with IBS.

Future research
The framework established in our research should be examined in a wider context to verify its application. However, future research should bear in mind that there is an extensive discrepancy within China (e.g. huge economic difference between urban and rural areas). As this framework is developed among those who are from cities, we suggest it needs to be tested in China’s other similar regions such as ShenZhen that share large commonalities in terms of economic development and consumers’ values. In addition, more care (e.g. additional measures) should be considered when measuring the concept of trust in bank as it has a relatively low reliability in the current context. However, it is also important to validate the measures with exploratory research. Moreover, the use of student sample limits the generalisability of our research. Thus, future research may test the model among other population (e.g. IBS adopters). This helps establish validity and reliability of the model as well as generalisability. Finally, another future direction could compare the model between male and female respondents. This helps us detect whether gender plays a significant role in risk perception; if so, what is the impact on other concepts identified by the model such as trust in bank and trust in IBS competence.

References


