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The role of structural assurance on previous satisfaction, trust and continuance intention: The case of online betting

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Abstract

Purpose – varied accounts exist regarding the role of trust and satisfaction in online continuance intention and contexts within which this occurs. This paper considers the moderating effect of structural assurance on satisfaction and trust and trust and continuance intention in a pure e-service context (online betting).

Design/methodology/approach – UK online bettors were surveyed with an instrument developed using validated variables and measurements, including continuance intention, satisfaction, trust (in vendor) and structural assurance. Structural equation modeling with Partial Least Squares (PLS) was used to evaluate the measurement and structural model simultaneously.

Findings – structural assurance positively moderates the trust-continuance intention relationship but not the satisfaction-trust relationship. Structural assurance is positively associated with trust.

Theoretical implications – the study contributes to research focused on exploring the moderating effects of trust and satisfaction on continuance intention where institution-based mechanisms are perceived to be effective and framed to assure success.

Practical implications – an over-reliance on context specific mechanisms is inadequate; strategic approaches to trust must consider contextual and institutional mechanisms interdependently.

Originality/Value – the paper addresses the need for research relating to the institutional context within which trust mechanisms operate. This research provides a novel contribution through an exploration of the moderating effects of structural assurance on: trust and continuance intention; and satisfaction and trust (we also measure the direct effect of structural assurance on trust). We are one of the first studies to examine these important concepts in this context. The online betting case allows for the exploration of risk where vendor-specific and contextual risk are both high.

Keywords: Structural assurance, institutional mechanisms, satisfaction, trust, continuance intention, online betting

Introduction

The development of the Internet as a viable channel for commercial transactions has proved to be an immutable force causing upheaval in many industries and sectors, creating new business opportunities for product and market development. Within the business to consumer (B2C) online environment the development of trust is essential in overcoming the risks that result from the distance between a buyer and a seller (McKnight and Chervany, 2002; Glover and Benbasat, 2010; Kim, 2014). Trust ‘cues’ come from two primary sources: the platform and the vendor (Hong and Cho, 2011; Chen et al., 2015). From the perspective of the vendor, aspects such as reputation and brand are able to form a ‘bridge’ between an organisation’s offline and online presence. By extension, this is not applicable to organisations with no offline presence - and from a consumer’s perspective – a situation that potentially increases the riskiness of doing business with an online-only vendor. In such situations institutional mechanisms play a very important role in propelling a customer to do business with the vendor. It would be erroneous to assume that institutional mechanisms operate consistently under diverse conditions (e.g. initial vs. repurchase situations; low risk vs. high risk transaction types). Derived from Zucker’s (1986) institution-based trust theory, structural assurance (SA) has received significant attention from IS scholars. There is conformity in this literature that SA is conceptually consistent with technology trust (Ratnasingam and Pavlou, 2003) and institution-based trust (Pavlou & Gefen, 2004); all of which share the common thread of being concerned with consumer perceptions of protection provided by institutional mechanisms.

Increasingly, there is a growing recognition that trust cues are influenced by the institutional context (Fang et al., 2014; Chen et al, 2015). Zucker (1986) and Sha (2009) define four key

mechanisms which combine to provide SA: seals of approval; vendor guarantees; credit card guarantees; and the regulatory / legislative framework. However - and as discussed in the literature review - there are a number of inconsistencies reported in the literature regarding the role of SA within various contextual applications.

According to Hofacker et al. (2007), “pure e-services exist at the nexus of the intangible product and the use of software to perform functions previously carried out by humans. They embody the need satisfactions of traditional services, but using a unique technology” (p. 12). Given that the process of betting relies on two key processes - information and funds transfers (Laffey, 2005; Jones et al., 2006) - a high degree of service digitisation is possible, leading to pure e-service offerings. The research context is particularly intriguing when consumer behaviour and risk are considered. Betting is an inherently heuristic behaviour, commonly underpinned by hedonistic motivations, with fundamentally flawed premises (Langer & Roth, 1975; Langer, 1983; Griffiths, 1993). Indeed, Wagenaar (1988) posits that if betting behaviour were entirely rational, the predicated rational behaviour would be to not gamble. Further, online betting as a pure form of e-service delivery introduces a curious caveat: the customer actively seeks and must overcome perceptions of risk when conducting a purchase in a highly intangible situation where it is difficult to quantify and qualify service delivery (Featherman et al., 2006).

It is important at this stage to identify a distinction between this study and previous research in the area. Previous research has explored initial purchase or repurchase, with the customer obtaining a definite tangible outcome. For example, Fang et al. (2014) explore repurchase in a situation where customers receive a tangible product and/or service delivery at a definite delivery point. The online betting case represents a highly intangible situation where vendor-specific risk and contextual risk

are both high. For the online bettor, it is possible that a transaction may fail (resulting in financial or informational loss) as a result of a fault with the vendor and/or the internet channel. For instance, the vendor may act in a un reputable manner, or the transaction may be intercepted (e.g. theft of personal and payment information). In such situations the relationship between satisfaction, trust and online consumer continuance intentions may be more complex. In response to the need for more research relating to the institutional context within which trust mechanisms operate (e.g. Gefen et al., 2008; Zhang et al., 2011; Fang et al., 2014; and Chen et al., 2015), this paper considers the moderating effect of SA on: trust and continuance intention; and satisfaction and trust in an online betting context. We are the first study to examine these complex relationships in this context.

The literature review around the key constructs that have informed the study is presented next. Thereafter the research hypotheses are outlined, followed by a description of the methodology, the data analysis strategy and presentation of the final results. The paper culminates with a discussion of the implications of the study for theory and practice.

Literature Review

In various online B2C settings, satisfaction and trust are generally found to be key determinants of intention (Szymanski and Hise, 2000; Anderson and Srinivasan, 2003; Pavlou & Gefen, 2004; Sha, 2009; Hong and Cho., 2011; Fang et al., 2014). There is also almost unequivocal agreement that the notions of risk and uncertainty play a more prominent role in the online environment than in the offline one (McKnight & Chervany 2002; Gefen et al., 2003, Pavlou et al., 2007; Qureshi et al., 2009; Lin, 2011). This is in part due to our lack of knowledge of the dynamics of vendor- and institution-based trust, with mixed accounts in the literature regarding their role in the online B2C

repurchase situation (Mayer et al., 1995; McKnight et al., 1998; Pavlou & Gefen, 2004). With transaction experience with the vendor (explored through satisfaction and trust) and the institutional context being information sources for the customer (Gefen et al., 2008), SA is tested as a key moderating variable in the study. The research model is illustrated in Figure 1. Thereafter, a review of the main constructs and variables in the model is presented.

[INSERT FIGURE 1 HERE]

Satisfaction

Oliver (1980, p.460) identifies satisfaction as being “a function of an initial standard and some perceived discrepancy from the initial reference point.” Satisfaction results when a customer’s requirements are fulfilled by the product/service delivery, with this appraisal mapped along a pleasure - displeasure continuum (Oliver, 1995). Two key reasons exist for positioning satisfaction within this research at the expense of other similar constructs: (1) the dynamic nature of e-service provision; and (2) the internal cognitive processes involved in repurchase behaviour. First, with the focus on need fulfilment, it would be inadequate to review online repurchase through vendor-specific quality scales (e.g. Cronin and Taylor, 1992; Pitt et al., 1995; Parasuraman et al., 2005). Satisfaction is a higher-level factor; service quality is one of its primary determinants, but it is insufficient in understanding the complete value of the repurchase context (Pitt et al., 1995; Sun et al., 2012). Second, human actors have limited cognitive abilities which result from assessments and decisions commonly containing errors (Gilovich and Griffin, 2002; Hindmoor, 2006). These cognitive errors occur due to the mental shortcuts (heuristics) that are used to facilitate information collection, collation and decision-making (Edwards, 1954; Kahneman and Tversky, 1979; Simon, 1990). When repurchasing, the customer recalls first-hand experiences with a particular vendor

(Fang et al., 2014). It is therefore conceptually valid to investigate repurchase intention through satisfaction (a post-consumption, cumulative evaluation) as this factor appreciates the nuances involved in the recollection and review of service value (Tsai and Huang, 2007).

Within an array of contexts, satisfaction is posited to positively influence repurchase through the reduction of perceived switching benefits and the formation of loyalty (Rust et al., 1995; Szymanski and Hise, 2000; Anderson and Srinivasan, 2003). Satisfaction is also found to form soft switching barriers in the form of relational costs i.e. emotional discomfort (Jones et al., 2000; Burnham et al., 2003). It is intuitively obvious that satisfied customers have a greater propensity to repurchase than dissatisfied ones (providing alternatives are available). Jones and Suh (2000) found satisfaction to account for more than 50% of repurchase behaviour.

Trust (Vendor Context)

Mayer et al. (1995) and McKnight et al. (1998) suggest that trust is a heuristic that customers use to form opinions that the vendor will act with benevolence, competence, honesty and/or predictability when or if something goes wrong. Trust is well supported in the literature to be a key determinant of purchase and continuance behaviour (Gefen, 2002; Flavian, et al., 2006; Qureshi et al., 2009; Fang et al., 2014).

Trust in a vendor is critical in exchange relationships where risks and uncertainty are prevalent (Jarvenpaa et al., 1999; Gefen et al., 2003). The e-commerce environment is considered to present more risk and uncertainty to customers than an offline one (Pavlou and Gefen, 2004; Qureshi et al., 2009; Lin, 2011). Due to the spatial and temporal distance in the B2C relationship, risk and uncertainty results from the relative anonymity of the vendor and/or the potentially incomplete and

inaccurate information regarding the product/service being purchased (Ba and Pavlou, 2002; Pavlou and Gefen, 2004; Pavlou et al., 2007; Hong and Cho, 2011). Customers must build higher levels of trust to overcome these risk barriers (Gefen et al., 2003; Malhotra et al., 2004).

Trust may also be viewed as a mechanism used by customers to help them deal with complexity and to facilitate rational decision-making (Gefen, 2000). Prospect theory (Kahneman and Tversky, 1979) highlights the importance of the framing effect in decision making. In general, when making decisions involving risk, the theory suggests that people tend to be more loss averse; manifested in a preference for avoiding losses rather than obtaining gains (relative to a reference point or value utility function). Prospect theory is particularly suited to modelling the role of SA on trust and continuance intention as it explains the loss-reward phenomenon in a betting context. In this context the bettor has already taken the decision to bet (and is thus in the negative domain according to prospect theory). In order to carry out the bet, he or she looks for external validation in the form of SAs to help protect his or her assets from loss – even if the bet is successful. Drawing on prospect theory, evaluations of trust and risk are both perceptual in that trust counteracts perceptions of opportunism and promotes risk-taking behaviour (McKnight et al., 1998; Pavlou and Gefen, 2004). In contrast to the initial purchase decision, the repurchasing customer has prior experience of interacting with a vendor. Therefore, their perceptions and assessments of trust are formed from an enlightened stance (McKnight et al., 2002; Gefen et al., 2003). Knowledge-based assessments of trust are preferred in a repurchase context as the repeat customer can draw on previous experiences as an information source to overcome any residual uncertainties that may exist (Pavlou and Fygenson, 2006; Kim et al., 2008; Ray et al. 2011).

Research has shown that the concept of trust operates differently in initial purchase versus repurchase occasions. The returning customer possesses significant first-hand experience which may be drawn upon to judge a vendor's likely future behaviour, therefore reducing subjectivity (Fang et al., 2014). This contrasts with secondary extrinsic information sources relied upon by first-time purchasers (Kim and Benbasat, 2009). McKnight et al. (1998) raise the issue that primary sources may dominate secondary sources of information in such contexts. For example, in our setting, the returning online bettor's experiences of service delivery (e.g. winnings successfully returned) may supersede information that was relied upon at the initial purchase occasion (e.g. reviews / referral from peers). However, it would be inadequate to presume that the expression of trust is independent of the purchase context. As Qureshi et al. (2009) point out, there are inconsistencies in the literature relating to this issue. On one hand, Gefen et al. (2003) claim that customers rely less on trust in subsequent transactions; a hypothesis supported by Van der Heijden et al. (2003). Further, even though the customer may have significant experience with an online vendor, some uncertainty and risk may remain in the repurchase process as the customer is unable to perfectly predict the potential outcomes of future events. Flavián et al. (2006), Chui et al. (2009), Qureshi et al. (2009) and Fang et al. (2014), amongst others, find that trust remains a significant determinant in repurchase situations. This implies that trust is also formed and reformed within continuance behaviours (Wirtz and Lihotzky, 2003).

Structural Assurance (SA) as an Institutional Mechanism

SA refers to various structures or elements that are in place in an online environment to derisk the online experience. Four key assurance mechanisms are defined and proposed to combine to provide SA: seals of approval; vendor-specific guarantees; credit card guarantees; and the

regulatory / legislative framework (Zucker, 1986; Sha, 2009). When applied, these structures can include a combination of both hard (e.g. legal conditions) and soft (e.g. contact details, referrals) measures (McKnight et al. 2002; Sha, 2009). Although there are different labels attached to various forms of institutional mechanisms - with SA being one such type (for others please see for example Fang et al., 2014; Gefen and Pavlou 2012; Pavlou and Gefen 2004) - there is widespread agreement that effective institutional mechanisms exist to assure the customer, through impersonal structures, that transactions (both informational and financial) will be conducted safely and securely (Zucker, 1986; Shapiro, 1987; McKnight et al., 1998; Gefen et al., 2003).

As identified in Table 1, SA is related to other ‘protection’ mechanisms in the literature (e.g. McKnight et al., 2002; Gefen & Pavlou, 2012; and Fang et al., 2014). It is essential to define and position the contextual situation within which the current research takes place. We use a two-dimensional matrix to do this: degree of risk framing and vendor-specificity (Fang et al, 2014).

Within this contextual setting there are conceptual differences between the current study and that of Fang et al. (2014) in terms of risk framing. Their study, examines the ‘perceived effectiveness of e-commerce institutional mechanisms’ (PEEIM), where the framing of risk is considered within an e-commerce environment that does not differentiate between product or service based repurchase situations, where inherently, perceptions of risk may vary.

In the current study, the framing of risk relates to continuance intentions of consumers within the specific online betting services context, which centers upon *assurance* (low degree of risk framing) as opposed to *risk reduction* (high degree of risk framing); and is concerned with the effectiveness of vendor-independent institutional mechanisms i.e. more akin to the institutional structures identified by Zucker (1986) and Sha (2009). Hence the research draws upon concepts from the

upper left quadrant of the matrix provided in Table 1. We posit that due to the specific risk framing of the study within an online betting services context, novel theoretical contributions to the field are made; with the practical outcomes being of particular relevance to online betting practitioners in facilitating bettors' continuance intentions.

[INSERT TABLE 1 HERE]

The literature remains fragmented regarding the direct role of SA on building consumer trust. Sha (2009) condensed the extant literature to find that SA may have a strong, weak, mixed or non-significant direct role on trusting intentions. Whilst it is initially difficult to reconcile such disparate conclusions, the contextual setting is suggested to be a critical factor in determining the role and applicability of particular SA mechanisms in various (re)purchasing scenarios. For instance, third-party assurances / seals of approval may be more effective than vendor guarantees in novel buying situations or in various geographical contexts. The overarching role of SAs in a betting context is even more intriguing as previous experience with an online betting firm might not have resulted in the receipt of a tangible reward (no win situation). Given this situation, satisfaction and trust, as markers of previous experience, might not be sufficient to explain the online purchase (i.e. placing a bet). It is anticipated that SA plays a very important role in driving this behaviour in such contexts.

Although there has been a considerable amount of work completed on the direct role of SA on online consumer trust, with varying results (e.g. Sha, 2009), there remains a lack of knowledge of the moderating effects of SA in an online context - particularly in a pure e-service environment - which is the focus of this study. This is important because the transactional relationship between a vendor and a customer does not exist in a vacuum; the institutional context can very often

determine the valence of previous experiences (e.g. satisfaction, trust) in a (re)purchase or continuance decision making scenario. For example, Gefen and Pavlou (2012) found support for the quadratic moderating role of institutional mechanisms on the effect of risk on transaction activity but not trust on transaction activity. This research seeks to extend this work by examining whether a similar institutional influence (i.e. SA) has a moderating effect on satisfaction and trust and trust and continuance intention in a repeat decision-making scenario (i.e. repeat online betting).

Considering the institutional perspective, applications of the four SA mechanisms (Sha, 2009; Zucker, 1986) are reflected and apparent in the online betting industry. First, eCORGA provides independent and internationally approved testing and certification of gambling technologies, demonstrating a commitment of security to the customer. Second, vendor guarantees are specific to the bookmaker and, contrary to seals of approval, provide a way to differentiate practice. Bookmakers are understandably keen to maintain situational normality to avoid unnecessary frictions in the betting process by providing thorough and robust self-controls and policies (which can be communicated through various marketing routes) that can provide additional assurances to the customer that any potential issues will be handled satisfactorily. Third, transactional guarantees are most commonly associated with those protections afforded by credit card providers. Current practice by reputable bookmakers include the use of appropriate secure payment portals and SSL encryption technologies. Finally, with regards to regulation, under the terms of the Gambling (Licencing and Advertising) Act 2014, all bookmakers wishing to provide services to GB customers must register and obtain a licence from the Gambling Commission. This commission is the central British public body responsible for protecting the industry and customers from criminal and unfair practices.

Research Model and Hypotheses

The principal hypotheses of theoretical interest in this research study are presented in Figure 1. Specifically, the research is interested in examining: the moderating effect of SA on trust and continuance intention (H1); the direct effect of SA on trust (H2); and the moderating effect of SA on satisfaction and trust (H3). The research also investigates the direct effects of satisfaction on trust; trust on continuance intention; and satisfaction on continuance intention as well as several control variables that have been suggested in previous research (Mayer et al., 1995; McKnight et al., 1998; Kim and Benbasat, 2006; Zhang et al., 2011).

The Moderating Role of SA on Trust and Continuance (H1)

The impact of institutional mechanisms on trust and continuance intention is keenly debated in the literature. Whereas some studies find a positive effect, others do not (e.g. Fang et al., 2014; Gefen et al., 2003; McKnight and Chervany 2002; Pavlou et al., 2007; Qureshi et al., 2009).

As delineated in Table 1, we examine SA as an institutional mechanism that moderates the relationship between trust and continuance intention (in a pure e-service context). In contrast to Fang et al. (2014), our conceptualisation of the institutional mechanism (SA) is associated with a lower degree of negative risk framing. This implies a greater need for external validation when decisions are being made. SAs may be viewed as a valuable source of such external validation in an online betting context.

According to prospect theory (Kahneman and Tversky, 1979), the valence of the framing effect has significant implications on behavioural intentions and actual behaviour. Prospect theory determines that the online bettor is positioned in the negative domain where it is accepted that a

decision could result in a real loss (or losses) i.e. a possibility of a no win situation and/or that something could go wrong when placing an online bet. Put another way, in such a situation the decision maker is more sensitive to potential losses (Wagner et al., 2009). This suggests that institutional mechanisms are important – even when a trusting relationship with a vendor (betting company) already exists.

Investigations into the moderating role of institutional mechanisms on trust and continuance or (re)purchase intention are sparse. Fang et al. are perhaps the most influential study in this burgeoning field. Although the significance of their negative moderating effect of PEEIM on trust and repurchase intention was marginal, they concluded that trust's importance in continued and repeat transactions is likely to become more and more limited over time, if PEEIM is high. That is, if PEEIM can more or less reduce the perceived risk associated with a transaction, then it negatively, rather than positively, moderates the association between trust and (re)purchase intention.

There is a logic to this argument in 'normal' e-commerce transactions – as was the context for Fang et al.'s study – where risks are primarily assessed on whether or not there is a 'safe' and normal flow of information, product and money between relevant stakeholders; However, we argue that transactions in a pure e-service context such as online betting are fundamentally different. We suggest that this context involves a higher level of risk over and above the baseline risk considerations associated with normal e-commerce (Gefen & Pavlou, 2006). These higher orders risks refer to considerations associated with the bet itself: namely the inherent uncertainty associated with the win-loss logic of every betting transaction.

In the context of the current study, we hypothesise that baseline risk considerations associated with normal e-commerce (i.e. the ‘safe’ and normal flow of information, product and money between relevant stakeholders) become intertwined with the higher-order risk considerations associated with online betting. In fact, we go as far as saying that these higher order risk considerations exert a much stronger influence than the baseline considerations alone. The combined effect of these dual sources of risk has the potential to negate the effect that SA has on diminishing the need for trust in other contexts, such as that investigated by Fang et al. (2014). Put another way, combined, these dual sources of risk create a context that cannot be considered risk-free. Therefore contrary to Fang et al. (2014), we believe that risk cannot be masked or reduced to an extent that trust plays a reducing role. From this perspective, the old adage is true: “*without risk there is no need for trust*”. Trust therefore not only remains an important consideration but is in fact strengthened in the presence of SA.

Related to this, we offer another a compelling reason for our seemingly contradictory hypothesis to Fang et al. (2014) as to why SA has a positive (as opposed to negative) moderating effect on trust and continuance intention in an online betting context. It is widely accepted that SA plays a more dominant role during the initial exchanges in a relationship because of the limited information each party has about each other (McKnight et al., 1998; Son et al., 2006). In other words, in situations that may be considered ‘new’ or first-time, SA assumes a very important role in strengthening the association between trust and continuance intention. In each betting scenario or bet placed, regardless of whether it is with the same betting agency or not, there is always a first-time element or feeling of ‘newness’ that triggers uncertainty and risk. This is because all betting activity is different, with unknown outcomes on the bet placed. This is captured by the collective (or dual) risk considerations that are characteristic of online betting in general (discussed

previously). As such, we posit that SA has to exert a positive moderating role on the association between trust and continuance intention in an online betting context.

We acknowledge that of the limited studies that have been carried out into the moderating role of institutional mechanisms on trust and continuance intention (or (re)purchase behaviour) there is more evidence to suggest that as SA increases then the relationship or association between trust and continuance intention decreases. That is, when SA is perceived to be effective or strong, then the need for trust reduces (Fang et al., 2014). In our study we argue the opposite effect. We propose that in the context of the current study, trust remains an important constituent in propelling continuance intention, even if or when SA increases. We argue that in an online betting context, baseline risk coupled with the risk inherent in online betting in general (including the newness associated with each betting episode) implies that SA positively rather than negatively moderates the association between trust and continuance intention. Formally, we propose our first hypothesis:

H1: SA moderates the relationship between trust and continuance intention such that when SA is higher, the relationship between trust and continuance intention is also stronger.

The Relationship between SA and Trust (H2)

Whilst both vendor-independent and vendor-specific institutional mechanisms are required in initial purchase occasions, there is some conjecture in the academic literature regarding the longevity of trust from institutional mechanisms in repurchase and continuance decisions. McKnight et al. (1998; 2002) and Pavlou and Gefen (2004) argue that trust in the institutional context is a ‘hygiene’ factor that ultimately becomes insignificant as first-hand experience takes over. Pennington et al. (2003) found that system trust, conceptualised as a manifestation of a

broader stream of vendor-specific institutional mechanisms, is a strong predictor of perceived trust in the vendor. Other studies that find a strong relationship between SA and online consumer trust include Gefen et al. (2003), Balasubramanian et al. (2003), Jones and Leonard (2008), Teo and Liu (2007) and Wingreen and Baglione (2005). It is therefore postulated that institution-based mechanisms such as SA will continue to positively influence trust in a pure e-service context. We formally present our second hypothesis:

H2: SA is positively related to trust.

The Moderating Role of SA on Satisfaction and Trust (H3)

In the repurchase context, consumers recall information pertaining to previous purchase situations. Mayer et al. (1995) and Zucker (1986) refer to this as process and outcome based sources of trust, respectively. Acting as ‘cognitive misers’, previous experience reduces the demands in processing information (Liu and Goodhue, 2012). As such, consumers are empowered to deal with cognitive and informational limitations in decision-making (Edwards, 1954; Kahneman and Tversky, 1979; Simon, 1990), with the information stored as ‘satisfaction’. Satisfaction replaces the sequential, carefully processed decision making assessments that occur within the initial purchase situation.

Success in previous transactions therefore leads to the development of satisfaction through satisfactory outcomes i.e. where transactions were handled in a competent, benevolent, honest and predictable fashion. Fang et al. (2014) assert that satisfaction is a reliable information source which can be accessed and used by the customer to overcome perceptions of risk. Qureshi et al. (2009) and Fang et al. (2014) contend that the e-commerce environment influences the relationship between satisfaction and trust in the repurchase situation. The general institutional mechanisms

(upper quadrants of Table 1) provide trust cues which influence the satisfaction to trust relationship.

To be specific, where institutional mechanisms (such as SA) are perceived to be ineffective, the institutional context becomes uncertain and interrupts the transference of satisfaction into vendor-based trust (Fang et al., 2014). This research draws on prospect theory (Kahneman and Tversky, 1979) to explore SA in a situation with a low degree of risk framing (assurance as opposed to risk reduction). Within this research context, the bettor is positioned in a negative domain; a situation where Wagner et al. (2009) finds the decision maker to be more sensitive to potential losses. Therefore, we posit that SA – as a vendor-independent institutional mechanism with a low level of risk framing – directly moderates the satisfaction to trust relationship. Where SA is perceived to be high, the recall of previous information as a valid trust cue is less likely to be interrupted, leading to a stronger transference of satisfaction into trust. We propose our third and final hypothesis:

H3: SA positively moderates the relationship between satisfaction and trust such that when SA is higher, the relationship between satisfaction and trust is also stronger.

Methodology

Sample

An online survey was used to gather the data to test the conceptual model (Figure 1). An e-mail shot was sent to 1,921 persons in a large UK university, inviting them to participate in the study. In providing informed consent, they confirmed their first-hand experience of online betting. The ‘typical’ online bettor is generally well-educated and is proficient in the use of ICTs, with much

of this knowledge stemming from their employment and/or educational background (Griffiths and Barnes, 2008; Griffiths et al., 2009; Wardle et al., 2011; ONS, 2012; ONS, 2013). Thus the target population is relevant for the purposes of the research. The invitation e-mail included a link to the survey instrument, which was housed on secure servers.

In total, 250 usable responses were collected after screening and cleaning, giving a response rate of 13.0%. 91% (n=217) of the respondents fall into the 18-34 year old age category. The age profile (see Table 2) is largely in line with the figures published in the British Gambling Commission (2017) report, where younger age groups have seen substantial increases in gambling participation, with 38% of 16-24 year olds and 48% of 25-34 year olds having gambled in the four weeks previous to completing the survey (+5% and +10% respectively from 2015).

Bet365 was the preferred online bookmaker for 40.4% of respondents (n=101), with Paddy Power (24%, n=60) and SkyBet (16%, n=41) the other most popular services. PaddyPower (n=144), Bet365 (n=111) and SkyBet (n=101) were responsible for most account ownership. Multi-account ownership was evident with 668 accounts identified in total. This corresponds with the British Gambling Commission (2017) findings which confirm that gamblers are multi-account holders having, on average, 3 online accounts with gambling companies in 2016. 76% (n=191) of the study population bet online at least once a month, with 70% (n=175) possessing more than 1 year of online betting experience.

[INSERT TABLE 2 HERE]

Measurements

The survey instrument was developed principally through the adoption and adaptation of empirically validated variables and measurements. Appendix 1 shows the measurements of all the latent variables. Continuance intention, which captures participants' inclination towards future betting, was measured by items adapted from Bhattacharjee (2001). Satisfaction, which denotes the participants' evaluation of the overall experience with the betting agency, was measured by three items adapted from Sun et al. (2012) and Zhou et al. (2012). Trust, which represents trust in the betting agency, was operationalized by three items adapted from Cronin and Taylor (1992), Gefen et al. (2003), and Parasuraman et al. (2005). SA, conceptualised as participants' assessments of safety nets in the specific environmental context, was measured by three items adapted from Gefen et al. (2003). All variables were measured using 6-point Likert-type scales. The control variables included gender, age, education, ethnicity, income, familiarity with the vendor, IT competence and situational normality.

Results

Data Analysis

The data analysis strategy includes three parts: (1) assessment of common method bias; (2) measurement validation; and (3) hypothesis testing. First, two tests to assess the likelihood of common method bias were performed (Podsakoff et al. 2003). Second, structural equation modeling was adopted with Partial Least Squares (PLS) to evaluate both the measurement and structural model simultaneously. This technique enables modelling of latent constructs under conditions of non-normality and medium-sized samples (Chin 1998). SmartPLS 2.0 (Ringle et al.

2005) was used to evaluate the measurement properties and test the hypotheses. In addition, the interaction effects were plotted by following the procedures suggested by Aiken and West (1991) and Dawson and Richter (2006). The changes in the R^2 with the addition of the interaction terms were also examined as suggested by Carte and Russell (2003).

Common Method Bias

To assess the possibility of common method bias two tests were performed. First, Harman's single factor technique was adopted by performing a principal component analysis of all the items belonging to the principal latent variables (Podsakoff et al. 2003). The results showed that one general factor accounted for 37.83% of the covariance between the measures. Second, the marker technique was employed to control method variance (Lindell and Whitney 2001; Richardson et al. 2009). The variable 'length of time betting online (LTBO)', a theoretically unrelated construct to the substantive variables in the study, was used as a marker variable. High correlations among any of the items of the principal constructs and LTBO indicate common method bias. Since the average correlation among LTBO and the four principal constructs was 0.14 (average p-value= 0.19), common method bias is not a problem. Both tests suggested that common method bias was not a major concern in this study.

Measurement Model

Measurement properties, namely item reliability, convergent validity and discriminant validity were evaluated in PLS. Table 3 shows that all of the factor loadings are greater than 0.706 suggesting an acceptable quality of item reliability (Hulland 1999). Following the suggestion of Fornell and Larcker (1981), convergent validity was also examined in terms of construct reliability,

composite reliability and average variance extracted (AVE). The results in Table 3 indicate that both construct and composite reliability statistics for the main constructs are acceptable, with a score of 0.70 or above (Nunnally 1978). In addition, the scores of AVE are all much greater than the 0.50 threshold. Consequently, all the constructs satisfy the requirements for convergent validity.

[INSERT TABLE 3 HERE]

To assess discriminant validity, the researchers verified whether or not the factor loadings of the latent constructs were different from each other. Table 4 shows that the correlation of each item with its own construct is greater than its cross-correlation with other constructs. Table 4 also shows that the square root of each construct's AVE is much larger than its correlations with all other constructs. Hence, all the constructs satisfy the requirements for discriminant validity.

[INSERT TABLE 4 HERE]

Structural Model

The proposed research model was assessed by examining the significance of the paths in the structural model. As suggested by Chin (1998), bootstrapping in PLS was employed to compute t-statistics and standard errors. Figure 2 provides the estimated path coefficients. The model explains 38.8% of the variance in trust and 34.2% of the variance in continuance intention.

[INSERT FIGURE 2 HERE]

As shown in Figure 2, Hypothesis 1, which states that SA moderates the relationship between trust and continuance intention, was supported ($\beta=0.192$, $t=6.401$, $p<0.01$, two-tailed).¹ Hypothesis 2, which proposes that trust is positively associated with SA, was also supported ($\beta=0.447$, $t=12.314$, $p<0.01$, two-tailed). Hypothesis 3, which asserts that SA positively moderates the relationship between satisfaction and trust, was not supported ($\beta=-0.005$, $t=0.160$, non-significant, two-tailed).

In addition, the relationship between trust and continuance intention was positive and significant ($\beta=0.156$, $t=4.207$, $p<0.01$, two-tailed), as was the relationship between satisfaction and trust ($\beta=0.268$, $t=7.484$, $p<0.01$, two-tailed) and satisfaction and continuance intention ($\beta=0.255$, $t=7.731$, $p<0.01$, two-tailed).

Five of the control variables were positively associated with continuance intention, namely: age ($\beta=0.069$, $t=1.801$, $p<0.05$, two-tailed); ethnicity ($\beta=-0.106$, $t=5.855$, $p<0.01$, two-tailed); familiarity ($\beta=0.159$, $t=4.614$, $p<0.01$, two-tailed); gender ($\beta=-0.076$, $t=2.842$, $p<0.01$, two-tailed); and situational normality ($\beta=0.060$, $t=1.926$, $p<0.05$, two-tailed).

To better understand the interaction between SA on trust and continuance intention the researchers plotted it following the procedures suggested by Aiken and West (1991) and Dawson and Richter (2006). The results indicated that at low levels of SA (mean - standard deviation), continuance intention (plotted with factor score, mean zero and standard deviation 1) increases marginally when trust increases. However, at high levels of SA (mean + standard deviation), continuance intention increases rapidly as trust increases.

¹ SA is essentially a quasi-moderator, both moderating the impact of trust on continuance intention and also having a direct impact on continuance intention.

[INSERT FIGURE 3 HERE]

To evaluate the substantiveness of the significant moderating effect, the change in the R^2 (i.e. ΔR^2) was examined with the addition of the interaction term, as suggested by Carte and Russell (2003). Table 5 shows the step-wise PLS results by putting the control variables, independent variables and interaction term into the model one after another. The results show that trust significantly increases the R^2 of continuance intention by 2.4 percent ($F=7.60$, $p<0.05$), indicating a small effect size ($f^2=0.02$). The interaction effect of SA with trust significantly increases the R^2 of continuance intention by 2.7 percent ($F=8.90$, $p<0.05$), indicating a small effect size ($f^2=0.03$) – but one which is regarded as an optimistic interaction effect (Fang et al., 2014). Thus, the F-test results confirm the significance of the moderating effect (Carte and Russell 2003).

[INSERT TABLE 5 HERE]

Discussion

Theoretical contributions

Inspired by Mc Knight et al (2002), Pavlou and Gefen (2004), Gefen and Pavlou (2012) and more recent research by Fang et al. (2014), this study sought to contribute to the growing research focused on exploring the moderating effects of trust and satisfaction on continuance intention in situations where institution-based mechanisms, such as SA, are perceived to be effective and framed to assure success by local (vendor specific), intermediary (referral) and regulatory mechanisms (regulations). Three principal hypotheses of theoretical interest were developed in an effort to reconcile the mixed results of previous studies that have examined similar paths. One

unique and significant aspect of the research is the context within which the data was gathered. This research is one of the first studies to test these hypotheses in a pure e-service, betting context.

The first hypothesis, the positive moderating effect of SA on trust and continuance intention was supported. Gefen and Pavlou (2012) hypothesised a similar effect but failed to find empirical support for the quadratic moderating effect of the perceived effectiveness of institutional structures (PEIS) (another type of institutional mechanism) on trust and transaction activity at very low, moderate and very high levels, respectively. The setting for their study was data gathered from a community of sellers (eBay and Amazon). Fang et al. (2014) introduced a new institutional-based moderator, perceived effectiveness of e-commerce institutional mechanisms (PEEIM) (another type of institutional mechanism) and found that it negatively moderated the trust to repurchase relationship, inferring that as PEEIM increases, the importance of trust in the vendor weakens. The setting for their study was general internet users with previous online purchasing experience. The current study is one of the first to provide empirical support for the assertion that SA, as an institutional mechanism, *positively* moderates the relationship between trust and continuance intention.

This is an interesting and significant finding. It seems that in the online betting context, where there are both rational and irrational decision heuristics at play without the promise of a tangible reward or visual receipt (i.e. pure e-service), a combination of both vendor trust and institution-based trust (i.e. SA) is required for continuance related decisions. The contradictory findings of Gefen and Pavlou (2012), Fang et al. (2014) and the current study need to be researched further to disentangle how risk-framing effects may further explain the differences in the direction of the

hypotheses across these studies as well as the contexts in which these hypothesised paths have been investigated.

The second hypothesis, the positive and direct effect of SA on trust (in bookmaker) was also supported. Although not specifically hypothesised in Fang et al. (2014), they did not find a main effect of PEEIM on trust in vendor in their study. Similarly, McKnight et al. (2002) did not find a significant and positive relationship between SA and trusting belief in their primary sample (although it was positive in the holdout sample). These findings contradict the current study as well as others that found a similar result. For example, Pennington et al. (2003) found that system trust, conceptualised as a manifestation of a broader stream of institutional trust, had a direct and positive effect on trust in vendor (interestingly, only web guarantees and not seals or ratings acted as an antecedent to system trust). In another study, Pavlou and Gefen (2004) tested the influence of four different institutional structures – perceived effectiveness of feedback mechanism, escrow services, credit card guarantees and trust in intermediaries – and found that all of them – except perceived effectiveness of credit card guarantees – had a direct and significant effect on trust in the community of sellers (Amazon).

One explanation to support the current findings vis-à-vis other studies that examined similar paths and constructs to the current study relates to the unique context of this research. The irrational decision-making heuristics associated with betting naturally places the act of betting in a negative domain, as the chance(s) of winning can never be certain. For example, according to prospect theory, decision-makers (i.e. bettors) may be more sensitive within a negative domain (losses) than a positive one (gains) (Kahneman and Tversky, 1979; Tversky and Kahneman, 1992; Wagner et al., 2009). One coping mechanism to mitigate the probability that the bettor will suffer financial

and/or informational loss (Kim et al., 2009) is to offset these ‘worries’ through the SA provided by local, intermediary and regulatory stakeholders.

The third and final hypothesis, the positive moderating effect of SA on satisfaction and continuance intention was not supported. As far as the researchers are aware only one other study modelled a similar relationship (PEEIM on satisfaction and trust) (Fang et al., 2014) and found a significant and positive relationship. This research sought to replicate a similar hypothesis in a new, pure e-service context (i.e. online betting) but the result was not significant (not supported). One explanation for this might be that in the context of online betting, previous satisfaction (as measured through overtly emotive items) represents a transient emotional state that is independent of the mechanism that facilitates and assures the online betting action. In other words, although the relationship between satisfaction and trust (in bookmaker) is positive and significant (as per extant research), the moderating impact of SA on satisfaction and trust (in bookmaker) is not. It is likely that there may be temporal and/or other constraints associated with this finding (e.g. the necessity to place a bet within a defined period of time). Future research should attempt to identify and model the peculiarities that characterise online betting in order to increase our knowledge of the complexities and mechanics of trust (and sources/targets thereof) in pure e-service contexts.

Practical Implications

There are practical implications for vendors operating in the online betting industry. Within this context, the bettor is viewed as a prolific and strategic user of multiple services due to low switching costs. Such a highly competitive and dynamic environment necessitates that online vendors pay constant attention to measures that will reduce consumer switching behaviours and ultimately build stronger continuance intentions. **It is recommended that in developing effective**

continuance intentions that the online bettor is provided with trust cues from vendor and institutional sources. However, an over reliance on context specific mechanisms is inadequate; strategic approaches to trust must consider contextual and institutional mechanisms interdependently.

This research finds the risk framing issue to be one worthy of specific attention for online betting service providers. The positive and direct effect of SA on the trust-intention relationship found in this study, indicates that the online bettor is critically sensitive and reliant on institutional trust cues as a source of trust. Online betting service providers should be strategically astute in the application of assurance mechanisms in their service design and delivery. In particular, priority should be given to SA institutional mechanisms which are found to facilitate repurchase in online betting situations. Our findings are at odds with those of Fang et al. (2014) due to contextual differences in risk framing within the respective repurchase situations of both studies. Drawing from Table 1, and specifically concerning the vendor-independent institutional mechanisms, online betting service providers should employ and promote mechanisms which *assure success* (SA) as opposed to those which *protect against potential risk* (PEEIM). To clarify, SA mechanisms are those which focus on providing protection and assurance; whereas PEEIM places a greater emphasis on reduction of risks (Fang et al., 2014).

As indicated through the typography of SA (Zucker, 1984; Sha, 2009), online betting service providers may incorporate and apply such assurance mechanisms through: seals of approval; vendor-specific guarantees; credit card guarantees; and the regulatory / legislative framework. In the UK context, independent accreditation is provided to the online betting industry through eCORGA (eCommerce Online Gaming Regulation and Assurance) which validates the

technologies and systems in place. Further, licencing is provided through the British Gambling Commission. There is an opportunity for the online vendor to prominently display adherence with these bodies to assure the bettor that appropriate practices are in place and followed. The application of such seals of approval and regulatory / legislative conformity does not necessarily provide a competitive advantage. Therefore, the online vendor may apply specific guarantees to assure the customer that any issues will be appropriately addressed.

As previously explained, the online bettor places themselves in a negative domain, making them particularly sensitive to potential losses as opposed to potential gains. It may therefore be prudent to provide SA mechanisms during the process where the bettor positions themselves in this domain; i.e. at the purchase stage. Establishing the *extent* of protection provided through credit card guarantees and payment systems may offer such enhanced assurance in building trust at the purchase stage.

The practical implications of this paper may be translated to other pure e-service providers, where generating confidence and customer loyalty and retention are challenging issues for online vendors. However, the authors acknowledge that the current application is specific within a negative domain and given the dual-risk and intangibility involved in online betting, it may not be directly transferable to other pure e-service contexts.

Conclusion

This paper has advanced our understanding of the moderating influence of SA in an online betting context where the vendor uses institutional mechanisms to provide assurances of transactions for their customers. It contributes to the research field through an exploration of the moderating effects

of trust and satisfaction on continuance intention in a pure e-service context, where institution-based mechanisms, such as SA, are perceived to be effective and are framed to assure success. It is concluded that SA positively moderates the relationship between trust and continuance intention but not the relationship between satisfaction and trust and that SA is positively associated with trust. The research findings provide a rich vein for future research to further explore the role of SA under different conditions, conceptually and contextually.

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