



Mixed emotions and credence service use: Insights from at-risk gamblers

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Abstract

Purpose – This research explores the power of appeals based on fear mixed with challenge co-designed with vulnerable consumers in motivating the use of credence services.

Design – A qualitative phase (study 1), comprised of focus groups of self-identified at-risk gamblers, revealed a series of conceptual themes for advertising stimuli that were then tested empirically (study 2) on the likelihood to use credence services in gambling context. Individual characteristics such as tolerance of ambiguity were also tested for their potential moderating influence.

Findings – In comparison to appeals based on single emotions, fear mixed with challenge has a significantly stronger impact on intentions to use credence services in at-risk gamblers. Findings confirm the indirect positive impact of fear mixed with challenge via sequential mediators of involvement with advertising and attitude towards credence service advertising. The moderating role of tolerance of ambiguity on credence service use intentions was confirmed.

Originality – The potential of a fear mixed with challenge appeal to motivate vulnerable consumers to seek credence services has not been investigated to date. Our findings contribute to both the TSR and advertising literatures by providing valuable insights into promotional campaigns aimed at vulnerable consumers such as at-risk gamblers.

Keywords Mixed emotions, fear mixed with challenge appeals, vulnerable consumers, at-risk gamblers, credence service, co-design, tolerance of ambiguity

Paper type Research paper

Introduction

Health-care services have transformative potential (Anderson *et al.*, 2018; Sweeney *et al.*, 2015) since their core offering aims to improve human well-being (Rosenbaum *et al.*, 2011) and reduce suffering (Fisk *et al.*, 2018). Importantly, limited empirical evidence suggests that the role of mixed emotions is instrumental in consumers' perceptions of services and its performance, guiding subsequent decision-making (Lunardo and Saintives, 2018). However, the use of appeals based on mixed emotions to promote credence service have not received the attention it warrants, particularly given theoretical and empirical accounts highlighting the important role that emotions play in the decision-making process (Lerner *et al.*, 2015).

Empirical evidence within the TSR literature on how to reduce perceived vulnerability and increase utilisation of services for stigmatised populations is scarce (Tanner and Su, 2019).

Broadly, this research begins to fill this void by exploring how to promote health services as credence goods (Gottschalk *et al.*, 2020) via mixed emotional appeals in a compulsive consumption context (i.e, gambling), contributing to the literature within TSR focused on vulnerable consumers in health service settings (Anderson *et al.*, 2018; Rosenbaum *et al.*, 2017). This research is the first to explain *how* fear mixed with challenge elicited by the advertising stimuli impacts on credence service use intentions in vulnerable consumers such as at-risk gamblers, testing its direct and indirect influence (via sequential mediators of involvement with the advertisement and positive attitudes towards credence service use).

Furthermore, this research explores aspects of segmentation for credence services targeting vulnerable consumers, confirming the moderating role of tolerance for ambiguity on credence service use intentions in at-risk gamblers.

Consumer vulnerability is defined as “a state of powerlessness that arises from an imbalance in marketplace interactions or from the consumption of marketing messages and products” (Baker *et al.*, 2005, p. 134), and compounded by the lack of “control within service

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3 context” (Anderson *et al.*, 2013, p. 1204). One important example of a vulnerable consumer
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5 is the at-risk gambler (Calderwood and Wellington, 2013), often stigmatized (Hing *et al.*,
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7 2016) and either unaware of specific credence services or reluctant to use these services
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9 (Gainsbury *et al.*, 2014). Ultimately, the ideal scenario is that at-risk gamblers can access the
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11 range of formal treatments that work best for them (i.e., credence services such as hospital
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13 inpatient/outpatient programs in mental health/addiction settings or certified gambling
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15 counsellors offering individual/group therapy) (Volberg, 2002). However, the critical factor
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17 is the gambler’s motivation to start using these services. Advertising appeals emphasising
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19 various intrinsic and extrinsic help-seeking benefits relevant for at-risk gamblers can
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21 effectively motivate help-seeking (De Vos *et al.*, 2021). Yet, it remains unexplored if mixed
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23 emotions evoked by the advertising stimuli can trigger constructive action for credence
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25 services use (i.e., inquire about the designated gambling support program to learn more about
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27 credence services offers, enrol in a gambling help program). Overall, investigation of
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29 effective advertising appeals is of value because as in case with commercial advertising,
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31 vulnerable consumers need to be aware of credence services that would benefit them
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33 (Calderwood and Wellington, 2013).
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40 This study contributes to the TSR literature in four ways: First, by demonstrating that
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42 indirectly (via sequential mediators of involvement and attitude), a novel combination of
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44 mixed emotions (fear mixed with challenge appeal) has a significant and positive impact on
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46 credence service use in vulnerable consumers such as at-risk gamblers. The focus here is on
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48 mixed emotions extending the field beyond hedonic or eudemonic emotions that are
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50 commonly discussed in the health care settings (Anderson *et al.*, 2018; Sharma *et al.*, 2017).
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52 This study confirmed that credence service advertising based on fear mixed with challenge
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54 ignites intentions to seek formal treatment among at-risk gamblers, potentially leading to
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56 sustained life satisfaction, improved well-being, and reduced suffering. Second, this research
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3 unveils the moderating role of tolerance of ambiguity on credence service use intentions,
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5 clarifying empirical inconsistencies in the literature as to why emotionally charged
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7 advertising may vary in their effects on vulnerable consumer responses towards credence
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9 services (Stafford *et al.*, 2011). Third, addressing a recent transdisciplinary call in services
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11 marketing (Russell-Bennett *et al.*, 2019), this research explores the impact of mixed emotions
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13 through the lens of the coactivation model of health (Larsen *et al.*, 2003), originating from
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15 positive psychology. This research pioneered to integrate the coactivation model of health
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17 into compulsive consumption context for vulnerable consumers within the TSR literature as
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19 previously this model was applied predominately in psychotherapy (Adler and Hershfield,
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21 2012) and physical health contexts (Hershfield *et al.*, 2013). Fourth, by utilizing service co-
22
23 design principles (Dietrich *et al.*, 2017), we captured the unique voice and input of individual
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25 agency (at-risk gamblers) to inform the design of advertising material (imagery, copy etc.).
26
27 To ensure high ecological validity, this research employed participatory research in the
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29 development phase (Hurley *et al.*, 2018), to minimize the chances of perpetuating oppression
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31 and further perpetuating the stigma among vulnerable consumers such as at-risk gamblers
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33 (Calderwood and Wellington, 2013). The overarching question of this research is: What is the
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35 role and the impact of fear mixed with challenge message appeals in enhancing intentions of
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37 credence service use in at-risk gamblers?
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47 **Literature Review and Hypothesis Development**

48 **Advertising Appeals for Credence Services**

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50 Extant literature suggest that feelings and consumer affect experienced in a health care setting
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52 have an important bearing on consumer value perceptions, satisfaction levels, and intentions
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54 to consume these service (Ng and Russell-Bennett, 2015). However, the services marketing
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56 field is in a state of “arrested development” with fragmented literature that illuminates the
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3 lack of understanding relating to the differential impact of advertising to promote credence
4 services (Stafford *et al.*, 2011, p. 138). Despite the fact that, as a credence service, health care
5 is difficult to evaluate even after purchase and consumption (Sun *et al.*, 2012), the role of
6 consumer affect is instrumental in consumers' perceptions of health service performance and
7 subsequent decision-making to use credence services (Ng and Russell-Bennett, 2015). Earlier
8 research claimed that service promotion based on emotional appeals was seen more often in
9 service advertising (Cutler and Javalgi, 1993). For example, Mattila (1999) revealed that
10 emotional appeals helped create favourable attitudes toward service brands in novice
11 consumers with little personal experience of a given service. Similarly, Mortimer and
12 Grierson (2010) found that emotional appeals were used more than rational appeals in
13 services. In another study, Mortimer (2008) suggested an increment in the use of emotional
14 appeals while designing marketing campaigns for both experiential and utilitarian/credence
15 services, as customers were found to be more emotionally involved while buying services as
16 compared to when buying products. Conversely, a credence service (i.e., surgery, dentistry,
17 psychotherapy, physicians, legal, and financial investments) was deemed more trustworthy in
18 the rational appeal condition than in the emotional appeal condition (Zhang *et al.*, 2014).
19 Based on a content analysis, Utkarsh *et al.* (2016) reported that rational appeals prevail in the
20 services marketing context for credential services (i.e., hospitals) with rational appeals
21 perceived more effective (Zhang *et al.*, 2014).
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47 Conversely, research has shown that consumers' affect is a critical driver of value
48 perceptions in consumers' experience of health services (Shaw, 2007). Recent empirical
49 evidence on service satisfaction indicates that service agency should allow consumers to find
50 a justification for service usage by evoking mixed emotions that may prevent mental
51 disengagement from information processing via positive reappraisal (Lunardo and Saintives,
52 2018). These mixed emotions of antagonistic valence (both positive and negative) defined as
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3 “the simultaneous or sequential experience of multiple emotional states during one
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5 consumption situation” (Otnes *et al.*, 1997, p. 82).
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10 ***Mixed Emotions: A Concept from Positive Psychology***

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12 The simultaneous experience of mixed emotions is not only possible (Larsen *et al.*, 2001), but
13 also beneficial (Larsen and McGraw, 2011). The coactivation model of health proposed by
14
15 Larsen *et al.* (2003) postulates that mixed emotions may allow individuals to make sense of
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17 stressors, gain mastery over future stressors, and transcend traumatic experiences.
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21 Empirically, the coactivation model of health was supported by longitudinal research
22
23 confirming the beneficial effects of mixed emotions on global measures of well-being
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25 inclusive of hedonic (i.e., life satisfaction), eudaimonic (i.e., self-actualization and vitality),
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27 and adaptation elements (Hershfield *et al.*, 2013). Larsen and McGraw (2011) argued that co-
28
29 activation of mixed emotions may be central to one’s ability to focus on stressful information
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31 long enough to find adaptive solutions. Hence, co-activation of positive and negative
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33 emotional processing is an important strength enabling individuals to work through and
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35 transcend negative emotions more effectively (Larsen and McGraw, 2011).
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42 **Emotions, Appraisals, and Actions**

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44 Functional theories of emotion have argued that emotions motivate and drive behaviour
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46 (Frijda, 1986). Overall, these theories postulate that an emotion is more than its dominant
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48 cognitive appraisal, requires a core relational theme, and results in particular emotional
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50 experience evoked in relation to the specific stimulus. Recent empirical evidence confirms
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52 that individuals could be both challenged and threatened by a particular stimulus in
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54 motivationally relevant situations, hence experiencing **emotions of mixed valence** (Uphill *et*
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56 *al.*, 2019). Fear is defined as a foreboding emotional response to a potential and relevant
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3 threat (Folkman and Lazarus, 1985) prompting attention and processing of information yet
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5 may trigger flight because people feel neither responsible nor capable of mitigating the
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7 danger. Challenge is effortful optimism combined with the promise of success and associated
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9 with strong appraisals of self-accountability and motivation to act to prevent problems
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11 through mastery (Smith *et al.*, 1993). Despite the fact that challenge can sometimes be
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13 experienced as unpleasant, it is considered a positive emotion (Delahaij and Van Dam, 2017;
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15 Tong, 2015; Yih *et al.*, 2020). For example, Yih *et al.* (2020) stressed that challenge, as a
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17 positive emotion, is associated with determination given its nature of goal pursuit and
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19 perseverance (Kirby *et al.*, 2014). Similarly, Tong (2015) examined challenge as a positive
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21 emotion that is elicited in situations where important goals are at stake and impeded by
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23 obstacles, and where much effort is needed to achieve them.
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29 By adapting these schools of thought on emotions, Passyn and Sujan (2006) found that
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31 relative to a unipolar emotion such as fear evoked by the advertising messages (i.e., fear
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33 appeals), mixed emotions (i.e., fear mixed with challenge) would produce a significantly
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35 stronger behavioural outcomes regarding suggested actions (i.e., sunscreen usage, eating high
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37 fibre foods). Overall, research has demonstrated a positive motivational impact of the mixed
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39 emotional experience on facilitation of self-control efforts (Berrios *et al.*, 2015) and
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41 behavioural change (Myrick and Oliver, 2015). Therefore, we hypothesise the following:
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45 H_1 At-risk gamblers exposed to fear mixed with challenge appeals have significantly
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47 more positive credence service use intentions (SUI) in comparison to those exposed to
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49 fear or challenge appeals only.
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54 ***The Mediating Roles of Involvement and Attitude on Service Use Intentions***

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56 Recent research emphasises the need to explore the role of mixed emotions in service
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58 marketing success, with a special focus on involvement (Storey and Larbig, 2018). A
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3 motivational variable that influences consumers' drive to process information at the time of
4 message exposure is defined as message involvement (Baker and Lutz, 2000). In problem
5 gambling, Munoz *et al.* (2010) found that individuals highly involved with graphic warnings
6 experienced more fear and engaged in thoughtful processing of the warnings. Furthermore,
7 previous research has claimed that involvement with a promotional message can be an
8 important mediating variable between evoked cognitions and emotions on the one hand, and
9 message acceptance on the other hand (Cauberghe *et al.*, 2009).

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19 *Fear* generates attention and accentuates self-protection (Ordoñana *et al.*, 2009);
20 whereas *challenge* boosts cognitive activity and stimulates information intake, thus keeping
21 consumers open to message processing (Schneider *et al.*, 2009), generally leading consumers
22 to engage in stimulus assessment confidently and thoroughly (Blascovich and Tomaka,
23 1996). Therefore, we argue that fear mixed with challenge would significantly influence
24 involvement with credence service advertising. Hence, it is hypothesised that:

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33 H_2 Evoked fear (H_{2a}) mixed with challenge (H_{2b}) positively influences involvement with
34 credence service advertising (INV).
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In problem gambling, accumulated empirical evidence indicates that strong message
involvement significantly impacts on attitude change (Muñoz *et al.*, 2013). Attitude is
assumed to be a mediating variable for behavioural change (Smith and Fabrigar, 2000) and
significantly influences help-seeking behavioural intentions in at-risk gamblers (De Vos *et al.*, 2021) As such, we propose that both involvement with and attitude towards credence
service advertising will positively influence credence service use intentions. Therefore, we
hypothesise that:

H_3 INV positively influences attitude towards credence service advertising (Attitude).

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3 *H4* Attitude positively influences SUI.
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5 *H5* INV and Attitude sequentially mediate the impact of fear (H_{5a}) mixed with challenge
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7 (H_{5b}) on SUI.
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12 Consumers found mixed emotion appeals equally persuasive to pure positive
13 emotional appeals (Hong and Lee, 2010), yet these mixed emotions may be considered
14 aversive (Janssens *et al.*, 2007). For example, when focusing on goal achievement, the direct
15 impact of mixed emotions on goal achievement was perceived as unfavourable (Mukherjee *et*
16 *al.*, 2012). Extant literature also reveals conflicting empirical evidence regarding the
17 effectiveness of fear appeals in vulnerable consumers with claims that fear alone cannot
18 effectively motivate behavioural change (Muthusamy *et al.*, 2009), especially among at-risk
19 gamblers high in experiential avoidance (De Vos *et al.*, 2017) . Furthermore, Yih *et al.* (2020)
20 and Tong (2015) stressed that the positive emotion of challenge can be experienced as
21 aversive . As such, we do not expect fear mixed with challenge appeals to **directly** influence
22 credence service use intentions. Hence, we hypothesise that:
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40 *H6* Fear (H_{6a}) mixed with challenge (H_{6b}) on SUI is non-significant.
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45 ***The Moderating Role of Tolerance of Ambiguity***

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47 The ability of a consumer to process information may be affected by individual
48 characteristics, thus preventing their ability to make optimal decisions and realise optimal
49 value during a market interaction (Baker *et al.*, 2005; Rosenbaum *et al.*, 2017). *Tolerance of*
50 *ambiguity* (TA) reflects individual differences in perceived tolerance of complicated, or
51 vague, situations or stimuli with acceptance of statements representing a rigid, black-white
52 view of life and seeking certainty (Furnham and Ribchester, 1995). For example, a study by
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3 Banks and De Pelsmacker (2014) revealed that TA plays an important role in developing
4 attitudes and intentions regarding advertisements with different types of probability markers
5 for utilitarian and hedonic service types. They found support that advertisements for more
6 hedonic, less-involving products or services, should contain hedges (probable, rather than
7 absolute, truth of a claim), especially for high TA consumers. The use of pledges (complete
8 commitment to the truthfulness of the claim), which are least ambiguous and uncertain,
9 should be used in advertisements of more utilitarian products/services in low TA consumers.
10 Similarly, Zhu *et al.* (2012) explored the impact of message source and TA on risk perception
11 and purchasing intention indicating a significant interaction of message source and TA on
12 intention to buy earthquake insurance. Specifically, individuals with higher TA felt more risk
13 and were more willing to buy earthquake insurance when the risk message was from publicity
14 than that from a word-of-mouth source.
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30 Empirical evidence from the field of clinical psychology linked TA with behavioural
31 rigidity and worry (Leyro *et al.*, 2010). Moreover, individuals with relatively lower levels of
32 TA are expected to react with greater emotional distress when faced with ambiguous
33 situations (Zvolensky *et al.*, 2010) or stimuli and would interpret such stimuli as threatening
34 (Budner, 1962). Importantly, empirical evidence from clinical psychology indicates that
35 distress tolerance (in which TA is a low order and domain-specific dimension) predicts early
36 treatment drop-outs in problem gamblers (Daughters *et al.*, 2005). Therefore, we argue that
37 attitude towards credence service advertising will positively influence credence service use
38 intentions only for those high in tolerance of ambiguity. Hence, we hypothesize the
39 following:
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56 H_7 Tolerance of ambiguity (TA) significantly interacts with Attitude and moderates the
57 Attitude \rightarrow SUI relationship.
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INSERT FIGURE 1 HERE

Figure 1 Conceptual model. Red arrow lines represent hypothesized non-significant relationship

Study 1

Study 1 explores various attitudes and opinions of at-risk gamblers regarding emotional appeals that may prompt message receivers to seek assistance for their gambling problems.

The following research questions were addressed: What type of appeal is most likely to motivate at-risk gamblers to believe that a credence service provider could help them with their gambling issues? What are their perceptions of negative, positive, and mixed emotional appeals to enhance service dialog of vulnerable consumes with these services? How would they depict these emotional appeals?

Method

Study 1 utilized focus group discussions for qualitative data collection, allowing participants to exchange and debate ideas (Calderwood and Wellington, 2013) while co-designing advertising stimuli. Following Dietrich *et al.* (2017), we incorporated a six-step co-design process (resourcing, planning, recruiting, sensitizing, facilitation, and evaluation of outcomes). Following Calderwood and Wellington (2013), we incorporated the KJ-Method of consensus building that allows groups to quickly reach a consensus on priorities of subjective, qualitative data. The transcribed qualitative data was thematically analyzed by the researchers themselves using a theme-based approach (Messerlian and Derevensky, 2007). Next, the text mining analysis (via Leximancer) was used to conduct semantic and relational analyses of text corpuses to further identify concepts, themes, and how they relate to one another. Using both a theme-based approach and text mining analysis enhances the

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3 trustworthiness of qualitative data and aids in triangulation via multiple data analysis methods
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5 (Lemon and Hayes, 2020). We embraced a twofold analytical approach (Previte and
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7 Robertson, 2019) with the initial phase of the analysis via Leximancer software, focusing on
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9 exploring and redefining concepts and textual data by deleting concepts with low semantic
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11 content, and merging concepts and frequently occurring words to encode new concepts
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14 (Smith and Humphreys, 2006).
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19 ***Participants and Procedures***

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21 Using convenience sampling (N=24; 12 men and 12 women), two focus groups were
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23 conducted with self-identified at-risk gamblers (aged between 20 and 70) within a capital city
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25 in Australia. The Canadian Problem Gambling Index (CPGI) (Ferris and Wynne, 2001) was
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27 used to determine problem gambling prevalence rates amongst those recruited, where
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29 participants scoring 3–27 points (moderate risk gamblers and problem gamblers) on the CPGI
30
31 were admitted. A word-association technique was used to encourage creative thinking and
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33 uncover thoughts and attitudes associated with emotional appeals. This technique enables
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35 researchers to surface initial thoughts (favourable/unfavourable word associations), which
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37 cannot typically be uncovered through standard interview methods in compulsive
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39 consumption contexts (Majeed *et al.*, 2018). Following Calderwood and Wellington (2013),
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41 participants wrote down their thoughts, feelings, and trigger words that they associated with
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43 pictorial stimuli eliciting negative, positive, and mixed emotions. The moderator then
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45 prompted respondents to elaborate on those associations to uncover the meaning. Last,
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47 participants were asked to imagine and describe their own emotional stimulus capturing
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49 associated words and images.
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58 ***Results and Discussion***

Negative Emotional Appeals for Service Promotion

Participants expressed polarized opinions regarding the use of negative emotional messages in the problem gambling context. Proponents of negative emotions revealed (via the word association map) that such messages would be ‘attention grabbing’, ‘memorable’, ‘can break through information clutter’, and ‘be truthful of what [problem] gambling can do to one’s life’; hence negative emotions were perceived as ‘impactful and relevant motivators’. For example, some respondents expressed the following:

‘I think message should be as hard as it can possibly be to get the bloke to face the reality and the problems he has caused.’

Others raised some concerns regarding communication evoking negative emotions:

It crashes you actually. It is very strong. For a gambler, it is really strong. It hits you. It can also lead you down to the ‘pokies’ especially for those who are teetering or have not gotten themselves under control.

Others proposed that ‘*It’s good to have the series of different messages: the terrible ones and the ones which tell you to do something about it [problem gambling]*’ reaching a general agreement with these statements by most participants (90% as per KJ-Method of consensus building).

Indirectly, via the word association technique, participants revealed their perceptions regarding the meaning of ‘the terrible ones [ad]’ that were affiliated with negative emotional conations such as ‘feeling fear’ and ‘being fearful’. The thematic map (by Leximancer) generated 13 themes that emerged in this discussion, with the dominant theme of *ad* (100% count relevance), *fear* (70% count relevance) and *fearful* (50% count relevance), also depicting *impact* (40% count relevance) among other themes. Participants were prompted to design/describe their own emotional appeals that would represent the meaning of such advertising stimuli.

INSERT FIGURE 2 HERE

Figure 2 Perception of fear appeals

Constructing Fear Stimuli for Credence Service Advertising

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3 When prompted to design their own emotional appeals, one respondent described gambling
4 venues ‘like traps’, ‘once trapped it is difficult to get out’. The focus group discussion
5 revealed that most participants (90% as per KJ-Method), shared the notion that loss of
6 personal control over excessive gambling translated into a fearful emotional response
7 perceived as “feeling trapped”. Most participants agreed that depicting such a theme can
8 ‘scare at-risk gamblers into help-seeking’ reaching an agreement that they can relate to such
9 theme (80% agreement as per KJ-Method). Some respondents (20% agreement as per KJ-
10 Method), exhibited a defensive response by attributing fear-evoking messages as ‘irrelevant’
11 for gamblers. One respondent noted: “*Maybe it [fear message] will offer somebody new to*
12 *gambling food for thought, but I doubt that a seasoned gambler would pull away.*”
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28 *Positive Emotional Appeals for Credence Service Advertising*

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30 Overall, at-risk gamblers discussed that positive emotions elicited by the stimuli would have
31 the capacity to ‘uplift’ recipients via meaningful words, images, and statements, instilling
32 hope and feeling like a ‘winner’ (70% as per KJ-Method). Interestingly, some participants
33 perceived positive emotional messages to be rather ‘patronising’ (20% as per KJ-Method).
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35 One participant mentioned that positive emotions ‘*would motivate me to a degree, but when it*
36 *comes to actually doing something about it – NO [voice raised]. It gets me half way only.*’
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45 The thematic map (by Leximancer) generated 10 themes that emerged regarding at-
46 risk gamblers perception of positive emotional appeals (Figure 3) with three dominant
47 concepts: *encouraging* (70% count relevance), *positive* (100% count relevance), and *hopeful*
48 (30% count relevance). The participants were then prompted to imagine and describe their
49 own appeals based on positive emotions.
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INSERT FIGURE 3 HERE

Figure 3 Perception of positive emotional appeals

Constructing Challenge Stimuli for Service Advertising

Some participants mentioned that gambling recovery is effortful: “*It is years. It is work in progress. I mean WORK [loud voice emphasizing the effort]*”. Thus, promotional stimuli needs to be appraised by respondents as effortful and demanding (90% agreement as per KJ-Method) to relate to the target audience. When discussing the central theme for an appeal based on positive emotions, several participants suggested that “It is frustrating if you cannot fight [gambling addiction]” and they would “feel enabled, positive, when encouraged to battle this [problem]”. These statements generated 80% agreement among participants as per the KJ-Method. When prompted to design their own advertising, some respondents suggested that message elements should be focused on personal ‘feel good’ achievements summarized by the following statements: “set yourself free from gambling”; do not let gambling win—you still can beat it!” generating 90% agreement among participants (as per the KJ-Method). The word association technique revealed that such a statement was perceived as “positive”, “strong”, and “uplifting to someone wanting to try [gambling help services]”. However, for some participants, such statements were perceived as “unconvincing” and “doubtful”. The thematic map (by Leximancer) generated 7 themes, with the dominant theme of *feel* (100% relevance count) and sub theme of *emotions* (90% relevance count). Importantly, subthemes such as *fighting [problem]* (50% relevance count) and *beating [issues]* (50% relevance count) emerged within the *feel* theme and were interconnected with the subthemes of *positive* (50% relevance count) and *hope* (30% relevance count). Notably, the subtheme *ad* (50% relevance count) was interconnected with *fighting [problem]* and *beating [issues]* themes via the dominant theme of *feel*.

INSERT FIGURE 4 HERE

Figure 4 Perception of challenge appeal

Perceptions of Mixed Emotional Stimuli

Participants suggested indirectly that mixed emotions in the message may motivate at-risk gambler to not only pay attention to the stimuli, but also to engage into a service dialog if motivated by a personal growth perspective. For example, one respondent claimed (generating 80% agreement among participants as per the KJ-Method) that: *“Fear alone is probably not enough; you need to give them [at-risk gamblers] something to work towards; entice them with a positive way of solving their problems, something they can look forward for.”* The generated concept map revealed several themes (Figure 4). The dominant theme *message* (100% count relevance) was connected (via the subtheme *gambler*) with themes such as *‘strong’* (70% count relevance) and *‘meaningful’* (80% count relevance). Mixed emotions emerged to evoke feelings that some perceived as *‘borderline [aversive]’* (50% count relevance). Interestingly, mixed emotions were associated with accountability thoughts in some at-risk gamblers, as depicted in the *family* theme (40% count relevance). One respondent noted (generating 50% agreement as per the KJ-Method):

“I feel mixed about my gambling. There is more at stake here than me; there is a relationship and family. [Gambling] issue is bigger than just me. Think about the other people that you are affecting by your gambling.”

INSERT FIGURE 5 HERE

Figure 5 Perception of mixed emotions

Discussion

Based on this preliminary qualitative evidence, we concluded that emotional appeals may achieve compelling results in terms of acceptance of resolutions (i.e., credence service use). Qualitative data analysis revealed that a combination of emotional appeals may be used to

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3 promote credence services to at-risk gamblers. Australian at-risk gamblers perceived the
4 theme of 'feeling trapped' due to losing control to gambling addiction as an impactful theme
5 that was selected by the respondents during the co-design session [90% agreement as per the
6 KJ-Method). Prior research on Canadian problem gamblers (Muñoz *et al.*, 2013), that also
7 utilised graphic pictures to evoke fear, depicted a video lottery terminal (VLT) as a monster
8 ready to devour a gambler chained to a VLT. The theme of being trapped, similar to the
9 theme of being chained to a VLT as per Muñoz *et al.* (2013) study was associated with
10 negative emotions (fear). In the current study, fear has emerged as one of the dominant
11 themes in the sematic analyses via Leximancer (*fear* as 70% relevance count). The co-
12 designed stimulus included text 'You may be trapped forever' visually representing a person
13 trapped in the slot machine and accompanied with the contact information on gambling
14 health help-services to enhance response efficacy (Calderwood and Wellington, 2013).

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31 Positive emotion appeals need to encourage and instil the spirit of 'battling and fighting
32 the gambling issue' to regain control in live (with the hope to set yourself free [from
33 gambling]). "Battle the health concern" in a challenge format was co-created with at-risk
34 gamblers as an encouraging statement to 'Set yourself free from gambling! You can still beat
35 it!' generating 90% agreement among participants (as per the KJ-Method of consensus
36 building). The semantic and relational map generated by Leximancer depicted
37 interconnectedness of sub-themes such as *fighting [problem]* (50% relevance count) and
38 *beating [issues]* (50% relevance count) with the subthemes of *positive* (50% relevance count)
39 and *hope* (30% relevance count). This finding parallels the notion in the challenge appeal
40 literature that a challenge format would include cues of optimism, personification of the
41 health concern, and combat (Smith, 2007). "Battle the health concern" recommendations in a
42 challenge format are action oriented, provide the chance to succeed on a task that is difficult,
43 but likely to be possible (Smith, 2007). Similarly, situations also tend to be perceived as
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3 challenging if they stimulate respondents to perform with the main goal of establishing that
4 they can succeed (I can do it!) (Wright and Kirby, 2003).
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8 At-risk gamblers also indicated that mixed emotional messages were impactful
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10 (generating 80% agreement among participants as per the KJ-Method), with emerged themes
11 such as '*strong*' (70% count relevance) and '*meaningful*' (80% count relevance), yet
12 '*borderline [aversive]*' (50% count relevance) for some participants as per the generated
13 thematic map (by Leximacer).
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19 Overall, engaging at-risk gamblers in these co-design activities helped to uncovered
20 meaningful attributes of fear mixed with challenge stimuli. Based on the KJ-Method of
21 consensus building among participants and emerged thematic maps (utilizing both a theme-
22 building approach and Leximancer text analysis depicting word count relevance and
23 interconnectedness between the themes) the following statements "You may be trapped
24 forever... Set yourself free from gambling! You can still beat it!" would depict both threat of
25 losing control and feeling 'trapped' by gambling addiction that evoked fear, yet elicit positive
26 emotions of challenge by offering a possibility to 'set yourself free' from gambling as an
27 effortful achievement that 'you can still beat it' if credence services [contact details provided]
28 are sought as a response action. These statements and imaginary were further refined into
29 print advertising to be empirically tested in study 2.
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49 **Study 2**

50 ***Procedure and Measures***

51 A professional advertising agency designed several advertising posters based on the data
52 provided in study 1 (Appendix A). The online questionnaire randomly displayed these stimuli
53 to the respondents (either fear, challenge, or fear mixed with challenge). The sample ($M_{age} =$
54 33.87, $SD_{age} = 17.63$) consisted of 227 males (49.9%) and 228 females (50.1%). Inclusion
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3 criteria were based on the frequencies of gambling activities each participant had engaged in
4 in the last 12 months via any means (i.e., casino, pub, on-line). Gambling activities included
5 card games (i.e., Poker or Blackjack), poker/slot machines, racing, sports etc. Respondents,
6 who reported that they gambled on a daily basis, or at least 2-5 times a week, were selected.
7 Respondents were identified by a user-defined code, thus ensuring their anonymity.
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11 All of the measures used were derived from the literature (Appendix B). Evoked fear
12 ($\alpha=.941$; from Dillard and Peck (2001), challenge ($\alpha =.860$; from Folkman and Lazarus
13 (1985), involvement with advertising ($\alpha =.878$; from Laczniak *et al.* (1999), attitude towards
14 advertising ($\alpha=.929$; from Munoz *et al.* (2010), tolerance of ambiguity ($\alpha=.876$; from the
15 MSTAT-II by Mclain (2009), and intentions to use credence services (SUI) ($\alpha=.914$; from
16 Wong and Cappella (2009). All measurement items were Likert-type scales anchored in 1 =
17 strongly disagree to 9 = strongly agree. Last, problem gambling prevalence rates among
18 recruited participants were assessed with the CPGI (Ferris and Wynne, 2001). Nine items
19 from CPGI were summed and cut-off scores were applied, by which a score of 0 identifies
20 non-problem gamblers, 1-2 low-risk gamblers (24.2 % of respondents), 3-7 moderate risk
21 gamblers (31% of respondents), and a score of 8-27 identifies problem gamblers (44.8% of
22 respondents).
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45 **Results**

46 *Manipulation Checks*

47 Following Williams and Aaker (2002), an emotional index (i.e., challenge index ($\alpha = .872$);
48 fear index ($\alpha = .948$)) for each stimulus was calculated. The Wilcoxon signed-rank test
49 indicated no significant difference ($z = -1.047, p = .295$) between felt challenge ($M= 4.19,$
50 $SD= 1.86$) and felt fear indices ($M=4.35, SD=2.33$) in respondents randomly exposed to fear
51 mixed with challenge ($N=148$). Furthermore, respondents randomly exposed to challenge
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(N=131) had experienced a significant difference ($z = -7.605, p = .000$) in felt challenge (challenge index $M = 5.06, SD = 2.06$) and felt fear (fear index $M = 2.36, SD = 1.97$). Finally, a significant difference ($z = -9.862, p = .000$) was observed between felt fear ($M = 5.84, SD = 2.16$) and felt challenge indices ($M = 2.80, SD = 1.72$) among respondents randomly exposed to a fear-evoking stimulus (N=176). In addition to assessing positive and negative emotional indices, we also combined them to create *a measure of emotional ambivalence* (Priester and Petty, 1996), or the degree to which emotional responses are actually mixed (Thompson *et al.*, 1995). A one-way between groups ANOVA was conducted to estimate any difference in *the ambivalence index* between respondents. The test results revealed that there was a significant difference in *the ambivalence index* ($F(2,452) = 20.481, p < .05$) among respondents exposed to different advertising stimuli. In particular, the ambivalence index was significantly higher for respondents who were randomly assigned to fear mixed challenge appeal format ($M = 4.94; F(1,452) = 40.50, p < .05$) than for those exposed to fear ($M = 2.34; F(1,452) = 5.28, p < .05$) or challenge formats only ($M = 1.95; F(1,452) = 8.99, p < .05$).

The Kruskal Wallis Test

We used a non-parametric test (Kruskal Wallis test) due to non-normal data distribution. The results of Kruskal Wallis test confirmed that intentions to seek professional gambling help service (SUI) in respondents exposed to fear mixed with challenge appeals yielded significantly higher means in comparison to respondents exposed to the fear or challenge only appeals ($\chi^2 = 10.971, df = 2, p = 0.004$; fear appeal $M = 1.99, SD = 2.53$, fear mixed with challenge appeal $M = 2.48, SD = 2.64$, and challenge appeal $M = 2.29, SD = 2.71$).

Hence, we found support for H_1 .

Structural Equation Modelling: Model Validation and Hypothesis Testing

We tested a latent structural equation model (SEM) with Mplus version 7 investigating the direct and indirect impacts of fear mixed with challenge on credence service use intentions, as outlined in the conceptual model. First, we conducted confirmatory factor analysis (CFA). The model fit the data reasonably well: MLR χ^2 (125) = 216.101, ($p < .001$), CFI = .964, TLI = 0.956, RMSEA = .057 (with a 90% confidence interval [CI] = [.044; .069]) and close-test p value = .193 and SRMR = .043. Using the CFA results, we calculated the composite reliability (CR) and average variance extracted (AVE) for each construct (Table 1). Most of the scores exceeded the recommended cut off values of .70 and .50 for CR and AVE respectively (Hair *et al.*, 2010). In line with Fornell and Larker (1981), the square root of AVEs exceeded the inter-construct correlations, confirming discriminant validity of all constructs (Table 1).

INSERT TABLE 1 HERE

Table 1 Construct reliabilities and discriminant validity. Notes: Diagonals in bold represent square root of AVE of each construct's indicators, while off diagonals represent inter-construct correlations (N=148)

Hypothesis Testing

Next, we employed latent SEM to estimate the hypothesized relationships (Figure 5). As expected for mixed emotions, evoked fear was significantly correlated with challenge ($\beta_{std} = .396$; $p = .000$). In support of H₂, fear (F) ($\beta_{std} = .199$; $p = .010$) mixed with challenge (CH) ($\beta_{std} = .262$; $p = .001$) positively influenced Involvement (INV). The results also indicate a positive impact of INV on Attitude (AT) ($\beta_{std} = .413$; $p = .000$), thus supporting H₃. In turn, AT exerted a strong and positive influence on credence service use intentions (SUI) ($\beta_{std} = .762$; $p = .000$) in support of H₄.

INSERT FIGURE 6 HERE

Figure 6 Results of the proposed model

Notes: *** $p < 0.001$; ** $p < 0.01$; non sig = non-significant

Next, we produced a bias-corrected bootstrap confidence interval for testing specific mediation effects (H_4) in complex latent variable models, as recommended by Lau and Cheung (2012), estimating specific upper and lower bounds for confidence intervals (CI) (i.e., with 95 level of confidence). Following Zhao *et al.* (2010), an indirect effect is significant and mediation is established if the 95% bootstrap confidence interval of the indirect effect does not include zero. Overall, the total indirect effect of Fear ($\beta_{std} = .121$; $p = .031$; 95% CI = [.011; .231]) mixed with Challenge ($\beta_{std} = .230$; $p = .000$; 95% CI = [.102; .358]) on SUI produced positive and significant effects, hence supporting H_5 . Likewise, the total effect of Fear ($\beta_{std} = .159$; $p = .054$) co-elicited with Challenge ($\beta_{std} = .302$; $p = .000$) significantly influenced SUI in at-risk gamblers. Moreover, the direct effect of Fear mixed with Challenge on SUI was non-significant (Fear $\beta_{std} = .038$; $p = .560$; Challenge $\beta_{std} = .072$; $p = .263$) as predicted by H_6 . Overall, the model explained 58% of variance on SUI intentions ($R^2 = 0.581$, $p = .000$); with 34% of the explained variance attributed by Attitude ($R^2 = 0.339$, $p = .000$); and 15% of the explained variance by INV ($R^2 = 0.150$, $p = .003$).

Next, guided by the Latent Moderated Structural Equations technique (LMS) (Maslowsky *et al.*, 2014) we analyzed the significance of the interaction effect between Tolerance of Ambiguity (TA) and Attitude and the impact of such interaction on the relationship between Attitude and SUI. The LMS produces estimates of latent interactions that are unaffected by measurement error which serves to increase a study's power and reduce the likelihood of biased estimates (Little *et al.*, 2006). The interaction effect of TA with Attitude was significant ($\beta_{std} = -.196$, $p = .012$) as predicted by H_7 . Next, we plotted this

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3 interaction effect to reveal that TA weakens the positive Attitude → SUI relationship (Figure
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12 Figure 7 TA x Attitude interaction plot
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15 16 17 **General Discussion**

18 19 **Summary of Findings and Implications for Theory**

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22 This research contributes to the TSR literature by embracing a call for a multi-disciplinary
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24 approach (Russell-Bennett *et al.*, 2019) in developing solutions to marketplace problems that
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26 confront consumers with vulnerabilities such as at-risk gamblers. In particular, through the
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28 lenses of the coactivation model of health (Larsen *et al.*, 2003) and insights from psychology
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30 and social marketing, this study delineates the direct and indirect impact of fear mixed with
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32 challenge emotional appeals on credence service use catering for gambling-afflicted
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34 consumers.
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38 Consumer vulnerability is an important area of concern in social marketing, and both
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40 TSR and social marketing literature share a vision about extending their fields of inquiry
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42 through instilling social change thinking combined with service marketing knowledge
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44 (Previte and Robertson, 2019). This research attempted to converge the pathway between
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46 TSR and social marketing by generating insights useful for social change programs
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48 (Zainuddin *et al.*, 2013) fostering help-seeking in vulnerable consumers (Sato *et al.*, 2017)
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50 and promoting credence services use for at-risk gamblers via advertising appeals based on
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52 mixed emotions. The focus on mixed emotions as a promotional vehicle for credence services
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54 explored in this study extends the TSR literature beyond hedonic or eudemonic emotions that
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56 are commonly discussed in health care settings (Anderson *et al.*, 2018), adding to the
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3 emerging services marketing literature on mixed emotions (Lunardo and Saintives, 2018).
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5 Specifically, qualitative insights from Study 1 identified meaningful message elements that
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7 evoke fear mixed with challenge in at-risk gamblers by depicting both threat of losing control
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9 over gambling and feeling ‘trapped’ by gambling addiction, yet capitalizing on an effortful
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11 possibility to ‘set oneself free from gambling and battle this health issue’, prompting at-risk
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13 gamblers use of specialised credence services. In Study 2, this research demonstrates *how* a
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15 fear mixed with challenge appeal impacts on credence service use intentions, confirming the
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17 indirect positive impact of fear mixed with challenge via sequential mediators of involvement
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19 with and attitude towards credence service advertising. Furthermore, this research revealed
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21 the moderating role of tolerance of ambiguity as an individual consumer characteristic that
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23 explains the effectiveness of fear mixed with challenge for respondents high in tolerance for
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25 ambiguity (TA). Study 2 confirmed the significant interaction of TA with attitude towards
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27 service advertising, supporting the hypothesis that low TA weakens the attitude → service
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29 use relationship.
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38 ***Managerial Implications***

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40 There are several managerial implications that this study suggests. First, this research orients
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42 credence service practitioners regarding the use of mixed emotions in their marketing
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44 communications, thus clarifying some contradicting evidence within services literature
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46 regarding the differential impact of emotional and rational appeals to promote credence
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48 services (Stafford *et al.*, 2011). Based on this study’s insights, managers can carefully
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50 calibrate the marketing communication mix to promote credence services to vulnerable
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52 consumers such as at-risk gamblers by using a fear mixed with challenge appeal format for
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54 the intended target audience. This study has identified meaningful visual and verbal/textual
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56 attributes of fear and challenge that can be embedded into the advertising stimulus, as per the
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3 developed and tested print ad (ensuring pilot pre-testing). Importantly, health service
4 promotion that lacks essential elements of “consumer proofing”, advocated within the TSR
5 paradigm (Dietrich *et al.*, 2017), may trigger harmful consequences in targeted audiences
6 such as prompting at-risk gamblers to gamble even more as a reactance response to
7 ‘wrongful’ advertising (Calderwood and Wellington, 2013). Credence service managers may
8 benefit from the empirical and practical insight of this study that has high ecological validity,
9 ensuring elements of ‘consumer proofing’ via co-design approach.

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Second, by applying co-design principles, this study provides meaningful insights for managers showcasing *how* advertising stimuli can be co-created with an individual agency such as at-risk gamblers. Importantly, by outlining the process of qualitative data collection, and integrating the ‘voices of vulnerable consumers’ via word association techniques, the KJ-Method of consensus building, the theme-building approach, and text analysis via Leximancer, this study assists managers in enhancing their competency in engaging vulnerable consumers in service dialogues. Extant literature suggests that absorbing customer knowledge and increasing customer involvement in service **solutions co-creation (Storey and Larbig, 2018) is highly warranted at the point of care and at an organisational or system level (Sharma *et al.*, 2017).**

Third, **this research highlights that service practitioners can improve their segmentation efforts catering mixed emotional appeals to the individual agencies that can tolerate emotional ambiguity. Importantly, extant literature suggests that some cultural factors (dialectical view of the self), may predispose some consumers, especially with Asian dialectical philosophy background (Buddhism, Hinduism, Confucianism), to accept ambiguity caused by mixed emotions more favourably (Sims *et al.*, 2015). The literature indicates that these segments of vulnerable consumers (Asian/Chinese**

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3 **societies) experience significant harm from problem gambling (Tang *et al.*, 2011), yet**
4 **may be more receptive to credence service advertising that evoke mixed emotions.**
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10 *Limitations and Future Research*

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12 This research is limited as it focuses only on the short-term, immediate effects of advertising
13 stimuli for credence services in at-risk gamblers. In future research, it would be interesting to
14 consider both the short and long-term behavioral effects of fear mixed with challenge
15 advertising appeals employing a longitudinal design to capture the more dynamic nature of
16 behavioural change in various contexts. Moreover, this research is limited to fear and
17 challenge emotions only. Lastly, future research should utilise physiological measures of
18 evoked emotions as a more accurate assessment, rather than relying solely on self-reported
19 measures of emotions.
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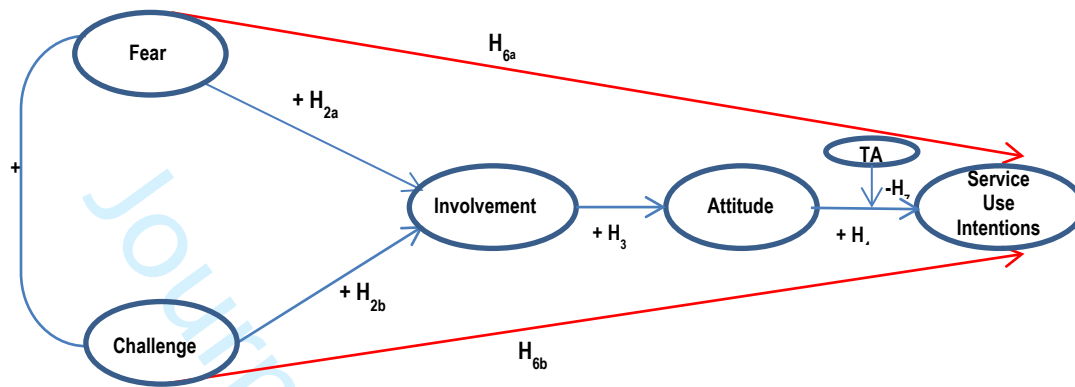
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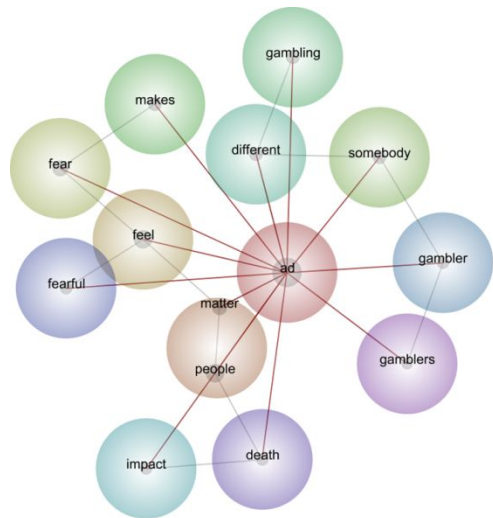
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Figure 1 Conceptual model. Red arrow lines represent hypothesized non-significant relationship



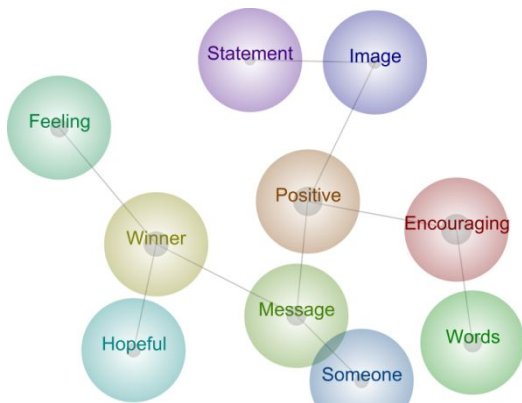
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Figure 2 Perception of fear appeals



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Figure 3 Perception of positive emotional appeals

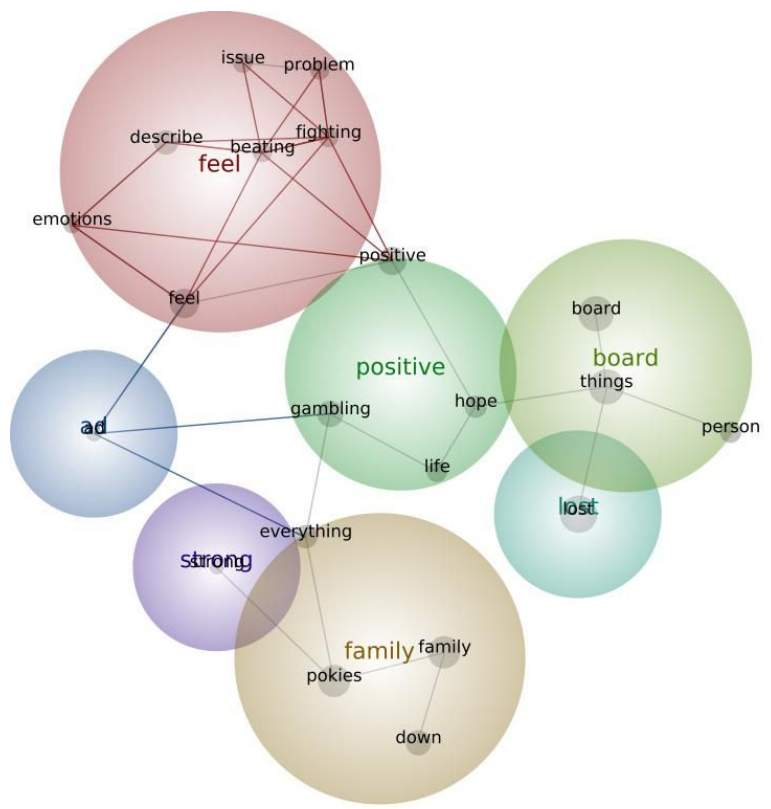


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Figure 4 Perception of challenge emotional appeal



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Figure 5 Perception of advertisement creative content evoking mixed emotions



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Figure 7 Results of the proposed model
Notes: *** $p < 0.001$; ** $p < 0.01$; non sig = non-significant

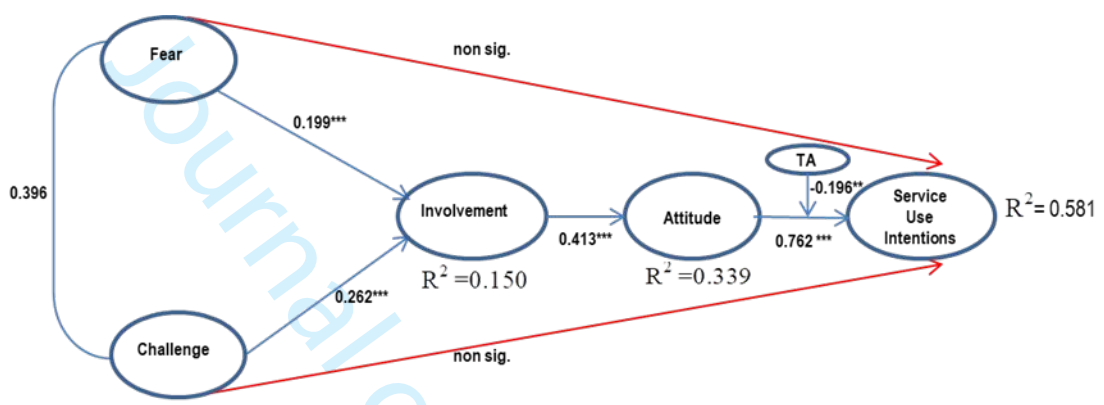
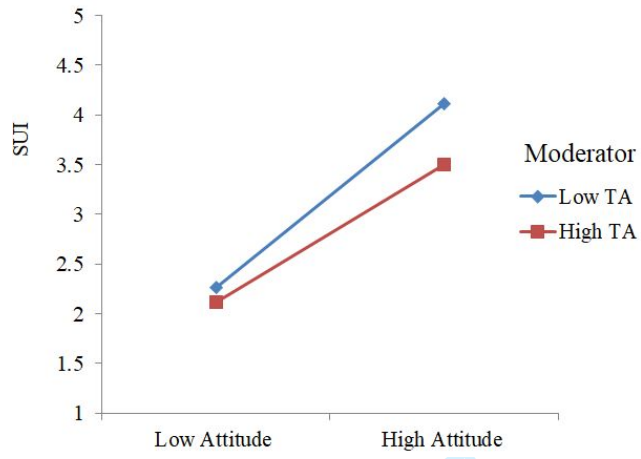


Figure 7TA x AT interaction plot



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Fear appeal format

Services Marketing



Challenge appeal format

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Fear mixed with challenge appeal format

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Measurement items	Standardised solution	SE	t-value	P-Value	Composite reliability
F1	0.933	0.019	48.930	0.000	0.920
F2	0.882	0.027	33.234	0.000	
F3	0.856	0.031	27.622	0.000	
CH1	0.689	0.054	12.785	0.000	0.826
CH2	0.698	0.047	14.928	0.000	
CH3	0.765	0.044	17.358	0.000	
CH4	0.790	0.038	20.988	0.000	
INV1	0.846	0.028	30.245	0.000	0.898
INV2	0.857	0.036	23.711	0.000	
INV3	0.840	0.037	22.712	0.000	
INV4	0.750	0.051	14.818	0.000	
AT1	0.879	0.028	30.941	0.000	0.940
AT2	0.857	0.032	26.786	0.000	
AT3	0.919	0.017	53.429	0.000	
AT4	0.888	0.020	43.656	0.000	
SUI1	0.855	0.032	26.809	0.000	0.939
SUI2	0.945	0.014	66.736	0.000	
SUI3	0.941	0.020	47.047	0.000	
TA1 ^c	0.697	0.057	15.206	0.000	0.937
TA2 ^c	0.710	0.043	20.463	0.000	
TA3 ^c	0.717	0.054	10.415	0.000	
TA4 ^c	0.694	0.032	13.420	0.000	
TA5 ^c	0.760	0.023	19.834	0.000	
TA6 ^c	0.722	0.037	12.438	0.000	
TA7	0.730	0.039	19.831	0.000	
TA8	0.689	0.031	13.419	0.000	
TA9 ^c	0.754	0.048	18.470	0.000	
TA10	0.720	0.057	14.418	0.000	
TA11 ^c	0.690	0.052	12.211	0.000	
TA12 ^c	0.711	0.021	18.460	0.000	
TA13	0.892	0.032	11.201	0.000	

Table : CFA results of all measurement items

Note. ^c Reverse-scored item.

Fear (**F**) : ‘fearful’, ‘afraid’, and ‘scared’ was adapted from Dillard and Peck (2001).

Challenge

(**CH**): ‘confident’, ‘hopeful’, ‘determined’ and ‘eager’ was adapted from Folkman and Lazarus (1985); Schneider *et al.* (2009).

Involvement (**INV**): was adapted from Laczniak *et al.* (1999) (i.e., How much *attention* you paid to process this advertisement?; How *engaging* it was for you to process this advertisement? How *involving* it was for you to process this advertisement? What was the *overall attention* you had with the advertisement?)

Attitude (**AT**) was adapted from (Munoz *et al.*, 2010) (i.e., To what extent did the advertisement make you feel motivated to call gambling help and support centre ?; To what extent did the advertising make you feel that you should try to seek professional assistance with gambling? How much did the advertisement make you feel that, at some point, you may change your gambling behaviour? How much did the ad make you feel that you did not want to gamble in the future?).

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2
3 Service use intentions (**SUI**) from Wong and Cappella (2009) (i.e., How likely is it that in the
4 future (i.e., next 3 months) you will: Seek counselling/support to help you with
5 gambling habits if needed; Enrol in a gambling help and support program if one were
6 available to you at minimal cost and easy access; Ring to the designated gambling
7 support centre to learn more about services to help people with their gambling habit).

8
9 Tolerance of ambiguity (**TA**) was adopted from the Multiple Stimulus Types Ambiguity
10 Tolerance Scale-II (MSTAT-II) (Mclain, 2009)(i.e., I don't tolerate ambiguous
11 situations well.(c)- Reverse scored-item; I would rather avoid solving a problem that
12 must be viewed from several different perspectives. (c); I try to avoid situations that
13 are ambiguous (c); I prefer familiar situations to new ones. (c); Problems that cannot
14 be considered from just one point of view are a little threatening. (c); I avoid
15 situations that are too complicated for me to easily understand. (c); I am tolerant of
16 ambiguous situations; I enjoy tackling problems that are complex enough to be
17 ambiguous; I try to avoid problems that don't seem to have only one "best" solution.
18 (c) ;I generally prefer novelty over familiarity; I dislike ambiguous situations. (c); I
19 find it hard to make a choice when the outcome is uncertain. (c); I prefer a situation in
20 which there is some ambiguity).
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Construct	CR	AV	INV	AT	SUI	F	CH
INV	0.898	0.688	0.830				
AT	0.940	0.796	0.521	0.892			
SUI	0.939	0.837	0.341	0.755	0.915		
F	0.920	0.794	0.303	0.315	0.279	0.891	
CH	0.826	0.543	0.341	0.406	0.365	0.396	0.737

Table 1 Construct reliabilities and discriminant validity. Notes: Diagonals in bold represent square root of AVE of each construct's indicators, while off diagonals represent inter-construct correlations (N=148)