The differential impact of "mood" on consumers' decisions, a case of mobile payment adoption

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Abstract

Research on consumer technology adoption has predominantly focused on technology acceptance models; the role of consumers' affective states and individual characteristics has largely remained underexplored. Drawing on the Mood-Behavior Model and the Affect Infusion Model, this research suggests that consumers' mood is an important factor that influences their decision to adopt in-store m-payment services. More importantly, the nature of this impact differs depending on two individual characteristics: consumers' decision-making style (maximizer/satisficer) and need for gratification. A scenario-based experiment (n = 322) provides empirical evidence for the significance of consumers' affective states in their judgements and decisions. When experiencing positive mood, those satisficers who have a higher need for gratification are more likely to use m-payment services. In contrast, in a negative mood state, maximizers with a higher need for gratification are more inclined to use m-payment. The findings contribute to the literature by demonstrating that mood is an important determinant of technology adoption and that consumers' individual characteristics define how positive and negative mood can influence their adoption decisions in different ways. The results also inform managers on an interesting consumer segmentation approach based on consumers' decision-making style and need for gratification when promoting in-store m-payment services.

Keywords: mobile payment; technology adoption; consumer mood; decision-making style; gratification; decision-making

Introduction

With recent advances in mobile technology and the increasing mobility of today's consumers, retailers and financial organizations are developing new forms of payment services using mobile platforms. Mobile payment (m-payment) services are designed as an alternative channel to enhance customer payment experience, offering salient values to both consumers and retailers (Oliveira et al., 2016). The financial and technology sectors have invested extensively to encourage use of in-store m-payment. However, motivating consumers to alter their habitual payment behavior has proven to be challenging (Gulati et al., 2015) and the adoption rate of these services in developed countries has remained relatively low (Johnson et al., 2018; Titcomb, 2017). As m-payment is changing the payment market (Hedman & Henningsson, 2015), providers and marketers need to better understand the drivers of consumer adoption behavior in order to enhance their product design and marketing strategies (Slade et al., 2015).

Current literature on technology adoption behavior has predominantly focused on characteristics of technology and explains its adoption from a utility maximization perspective. Similarly, m-payment research has widely used technology adoption models to examine antecedents of its adoption such as ease of use, usefulness, perceived trust, risk, and security (e.g., Dewan & Chen, 2005; Kim et al., 2010; Liébana-Cabanillas et al., 2018; Lu et al., 2011; Urmetzer & Walinski, 2014; Yang et al., 2012). However, industry-based research (e.g., Gulati et al., 2015) has shown that these factors are not sufficient to encourage consumers' adoption behavior, especially in situations in which adoption is a volitional act (Malhotra & Galletta, 2005). Our current understanding of consumers' adoption decisions, which goes beyond the perceived utility and reaction to technology, is limited (Claudy et al., 2015).

Consumers' decisions to adopt technology are determined not only by their emotional reactions (e.g., attitude) towards it but also by their affective state, such as mood (Djamasbi et al., 2010). In fact, their affective state and 'how they feel' when interacting with technology is an influential factor, as emotional mechanisms work along with rational thinking to define our rational choices (Hanoch, 2002; Muramatsu & Hanoch, 2005). Affective states influence users' perceptions of technology characteristics (Darban & Polites, 2016). Mood, as an affective state, has been shown to influence technology usage and adoption decisions by altering an individual's perception (Yin et al., 2015), attitude (Shen, 2015), cognition, and behavior (Djamasbi et al., 2010). This study takes the literature forward by examining the mechanism through which mood influences the adoption decisions of consumers with different personality traits. Drawing on the Mood-Behavior Model (MBM) (Gendolla, 2000) and the Affect Infusion Model (AIM) (Forgas, 1995), we propose that the affective states of consumers can influence their m-payment adoptions by having: a) informational impacts; and b) directive impacts. Furthermore, we show that individuals differ in the way they are influenced by the informational and directive impacts of their mood. Two individual characteristics – the need for gratification and decision-making style – which determine consumers' motivation towards a behavior, are examined. The need for gratification, as a personality trait (O'Guinn and Faber, 1989), affects individuals' behavior by encouraging them to act in such a way that enhances their mood (Arnold & Reynolds, 2003). This may manifest in receiving gratification in the form of a hedonic reward from shopping-related behavior (Babin et al., 1994) or from using technology (e.g., Luo, 2002; Luo et al., 2011; Nysveen et al., 2005). Moreover, consumers' decision-making style (maximizer vs. satisficer) can influence their motivations (Schwartz et al., 2002) and determine their reliance on their feelings in a

decision situation (Parker et al., 2007). Therefore, we propose that consumers' need to receive gratification from shopping activities and their decision-making style can moderate the influence of their mood on their volitional adoption decisions.

A scenario-based experiment was conducted to examine how customers' mood influences their in-store m-payment adoption and how this effect is moderated by individual's decision-making style and need for gratification. The findings contribute to the literature by indicating that mood is an important determinant of adoption behavior. In addition, these individual characteristics define how positive and negative mood influences consumers' adoption decisions in different ways. It also expands the literature on decision making by providing further evidence for the role of affective state in rational decisions. Understanding the reasons behind in-store m-payment adoption decisions for each consumer segment has important managerial implications and can inform businesses on their marketing and service implementation practices.

Theoretical background and hypothesis development

The differential impact on behavior caused by mood, as a state of being, is rooted in its entangled relationship with individuals' traits. Psychology and individual differences literatures have long distinguished between traits and states. Traits are stable, long-lasting, and focused on the person; they provide a reliable prediction of behavior over time and across situations. States are temporary, brief, and unstable over time; they identify behavior that is caused by a particular situation (Chaplin et al., 1988). In other words, traits account for the expectations of a behavior given a person, while states consider the person in a situation (Steyer et al., 1999). Previous research on m-payment adoption has largely overlooked the role of individuals, with a few exceptions that have examined demographics such as age (e.g., Liébana-Cabanillas et al., 2014),

personal innovativeness as an individual trait (e.g., Liébana-Cabanillas et al., 2018; Pham & Ho, 2015; Yang et al., 2012), or expected enjoyment as a state that is caused by the use of m-payment (Koenig-Lewis et al., 2015). However, individuals' affective states at the time of the adoption decision, such as their mood, have not been explored.

States or traits alone cannot explain behavior with sufficient accuracy (Steyer, Schmitt & Eid, 1999); instead, behavioral differences are largely due to interactions between the two (Chi & Yang, 2015; Gabel &McAuley, 2018; Zhao et al., 2017). Therefore, examining mood in a vacuum will only reveal a partial view of its impact. This research explores how mood, as an affective state, influences consumer m-payment adoption decisions, and how this relationship is moderated by two individual traits: decision-making style and the need for gratification. Figure 1 shows the proposed theoretical framework of this study.
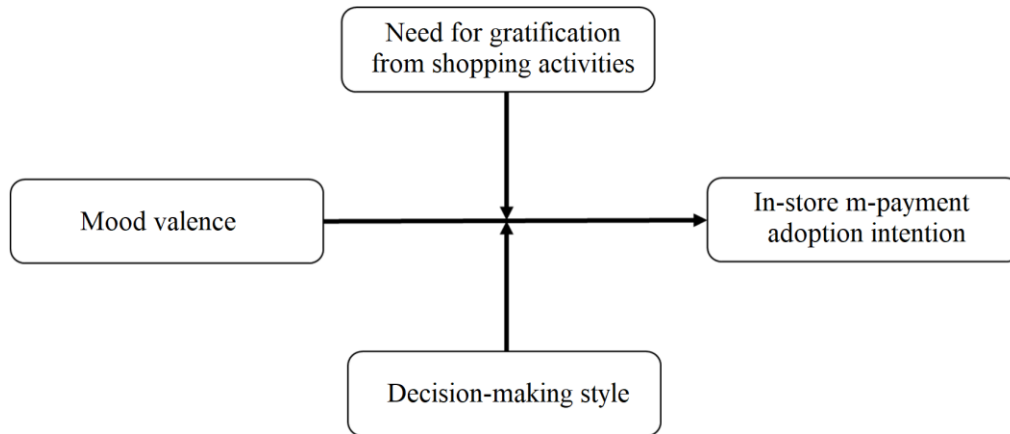

Figure 1. Proposed theoretical framework

Mood and behavior

Moods are long-lasting affective states that can be associated with positive or negative valence (Biss et al., 2010). Compared to emotions and feelings, moods are

more holistically experienced (Gendolla, 2000). They are defined as "low-intensity, diffuse and relatively enduring affective states without a salient antecedent cause and, therefore, little cognitive content (e.g., feeling good or feeling bad)" (Forgas, 1992, p. 230). Due to being pervasive and enduring, moods provide the underlying affective context for our thought processes and behavior (Forgas & George, 2001). Prior research (e.g., Barone et al., 2017; Djamasbi et al., 2010) has demonstrated that mood has a significant effect on individuals' cognitive processing and can effectively influence their decisions and reactions. Individuals' affective states influence their decision-making behavior in different ways (Wyer & Carlston, 2010). It can inform judgements by activating information in the memory (Forgas, 1995) and serve as diagnostic information in an evaluation (Schwarz, 1990).

The AIM suggests two alternative mechanisms for the impact of mood on judgements and decisions: affect-priming and affect-as-information (Forgas, 1995). These impacts are complementary and occur in different processing conditions. Affect-priming mechanisms of mood have a selective influence on attention, retrieval, and associative processes. Affect-as-information mechanisms inform decisions by using affective state as a shortcut to infer evaluations. In addition to directing information-processing behaviors, the MBM proposes that mood can direct behavior by creating hedonic motivations (Gendolla, 2000). Accordingly, two distinct types of impact for mood are identified: informational and directive impacts. The two are, however, conceptually different and are evoked by different motivational processes and behaviors. The informational impact of mood influences behavior by affecting judgements. People use their mood as an input to their decision making by asking themselves how they *feel* about a decision problem (Schwarz & Clore, 1983). The directive impact of mood, on the other hand, influences behavioral preferences by

triggering hedonic motives (Gendolla & Brinkmann, 2005). In this situation, people who are hedonically oriented seek to maintain their positive mood and repair their negative mood by changing their decisions and behavior (Gendolla, 2000). Therefore, mood affects actions by influencing the cognitive processing and hedonic motivation of individuals. Consequently, it can influence the initiation of certain behavior (Geen, 1995) and can, therefore, trigger consumers' behavior and choices. Thus, it may affect m-payment adoption decisions by influencing consumers' information-processing behavior or directing actions with hedonic affect-regulation motives, which will be discussed later.

Valence of mood

Mood is associated with valence, which is the extent to which an affective state is positive or negative. Positive and negative mood have repeatedly been shown to affect consumers' behavior in terms of information processing and evaluation (Bagozzi et al., 1999), such as their product choices (Di Muro & Murray, 2012) and evaluation of service performance (Liljander & Mattsson, 2002). Customers in a positive mood evaluate a product or service more positively compared to those in a negative mood. They tend to see the "brighter side" of things because they focus on the advantages or benefits as opposed to the disadvantages or costs (Han & Gershoff, 2019). In this situation, individuals feel more confident in their evaluations (Gendolla, 2000). Because all is going well and they feel "free from immediate danger and unmarked by recent loss," they are more prepared for challenges and new opportunities (Fredrickson, 2001) and tend to approach, rather than avoid, new possibilities (Lyubomirsky et al., 2005). The valence of mood has also been shown to have a significant effect on an individual's reactions to, and intention to use, a new technology. Djamasbi et al. (2010) demonstrate that people are more willing to use an unfamiliar information system if

they are in a positive mood as they are more optimistic in their evaluations and assessments of expectations than when they are in a negative mood. Therefore, positive mood is expected to enhance consumers' intentions to adopt a new technology or service, as they will assess its value optimistically, while negative mood is expected to reduce this willingness. This decision can also be influenced by a consumer's motivation to enhance their mood.

Changes in individuals' mood can be caused by internal and external events (Payne & Cooper, 2003). Although internal factors, such as psychological reactions, cannot be easily manipulated by marketing strategies, existing business and psychology research (e.g. Law et al., 2012) have repeatedly shown that mood valence can be influenced by external events, such as in-store stimuli and the (un)pleasantness of an environment. By altering environmental factors such as product display, music, odor, light, and so on, retailers can significantly influence individuals' mood states (e.g., Baron, 1997; Bruner, 1990; Di Muro & Murray, 2012; Küller et al., 2006; Miniard et al., 1992; Park et al., 2005; Pelet & Papadopoulou, 2012; Swinyard, 1993).

Individual traits, consumer mood, and adoption

Mood can affect individuals differently as they differ in the extent to which they attend to their feelings and have different behavioral motivations to change their mood (Gabel & McAuley, 2018; Han & Gershoff, 2019; Palmer et al., 2003).

Although the informational and directive impacts of mood are independent from one another and are associated with different motivational processes, both can lead to the alteration of individuals' behavior (Gendolla, 2000). These motivational processes are not stimulated in all consumers in the same manner. In other words, the two impacts of mood (informational and directive) could have diverse influences on different

consumers. The present research considers the two individual characteristics of decision-making style and the need for gratification, which are closely related to the two impacts of mood. On the one hand, consumers act differently to satisfy their hedonic motives when they experience negative mood; they may opt for a more active or passive behavioral strategy (Thayer et al., 1994) depending on their need for gratification. On the other hand, different impacts of mood occur in different processing conditions (Forgas, 1995). As consumers adopt different information processing behaviors depending on their decision-making style (Karimi et al., 2015; 2018), their mood can influence their judgements and adoption decisions in different ways.

Decision-making style

The influence of mood on judgments and behaviors depends on the decision-making and information processing strategies that individuals adopt (Forgas & George, 2001). Individuals differ in their decision-making style, which indicate their habitual information processing and choice-making behaviors (Karimi et al., 2018; Yang et al., 2012). Therefore, we propose that decision-making style can diversify the influence of mood on behavior. Depending on their mood, consumers engage in different decision-making and cognitive processing behaviors (Bless et al., 1996). Simultaneously, their decision-making style, in terms of their tendencies towards maximizing and satisficing behavior, affect their choices (Brannon & Soltwisch, 2017; Karimi et al., 2015) and can, therefore, moderate the effect of mood on in-store m-payment adoption decisions.

Schwartz et al. (2002) propose that individuals have different maximization tendencies and can be classified into two decision-making styles: maximizers (high in maximization tendency) and satisficers (low in maximization tendency). Maximizers are careful decision makers and engage with intensive cognitive processing; they

9

cautiously weigh and evaluate information (Schwartz et al., 2002). Maximizers tend to engage with social comparison and use social comparison information to judge the quality of their performance (Cheek & Schwartz, 2016; Iyengar et al., 2006). Compared to maximizers, satisficers do not spend as much time and effort on information evaluation (Iyengar et al., 2006; Karimi et al., 2015). They tend to use heuristics that simplify their choice behavior, such as instincts and feelings. They are, therefore, more likely to be affected by peripheral cues (Liu et al., 2016). Satisficers are inclined to use their feelings as information and make decisions by relying on their impressions (Schwartz et al., 2002).

According to the MBM, through its informational impact, mood can serve as indicative information for behavior-related judgements (Gendolla, 2000). In a decision situation, these behavior-related judgements can significantly influence cognitive processing behavior by acting as a cue that creates an affective reaction to an option, providing the basis for evaluation (Bless et al., 1990; Schwarz, 2000). That is, mood can directly inform judgements as a shortcut in heuristic processing (Forgas, 1995; Schwarz and Clore, 1983). As highlighted previously, satisficers tend to use peripheral cues and heuristics to reduce their cognitive effort and simplify decision-making tasks. They use their emotions as information and follow their perceptions as a base for evaluation (Schwartz et al., 2002). Therefore, satisficers are more likely to be affected by the informational impact of mood. We propose that their decision to use the in-store m-payment services relies on their mood as piece of information that gives a positive or negative signal to their decision. Instead, maximizers tend to rely on intensive cognitive processing of factual information and are, therefore, less likely to be influenced by the informational impact of mood.

The directive impact of mood, on the other hand, suggests that individuals are motivated to sustain positive and avoid negative affective states (Gendolla, 2000; Gendolla & Brinkmann, 2005). Consequently, they perform certain behaviors to serve this purpose (Forgas, 1995; Thayer et al., 1994). We propose that maximizers are influenced by the directive impact of mood, particularly when they experience negative feelings. Unlike satisficers, they do not take their negative feelings as information and a base for evaluation (Schwartz et al., 2002) but rather feel motivated to choose the behavior that enhances their mood. Simultaneously, they are engaged in social comparison (Cheek & Schwartz, 2016) and have a higher incentive to behave in a way that enhances their social status, compared to satisficers (Iyengar et al., 2006). Maximizers who focus on being the best and "winners" in terms of their social position, particularly when the decision is publicly available, are more likely to engage with activities that elevate their winner image and, therefore, repair their negative mood (Weaver et al., 2015). The use of innovation (Moore & Benbasat, 1991) such as mobile services and m-payment (Lu et al., 2005; Yang et al., 2012) have been shown to enhance an individual's perceived image and status in a social setting, which can consequently affect adoption. To repair their negative mood, maximizers are drawn towards an action that conveys a higher social image; this may manifest in their in-store m-payment adoption behavior as social influences are important determinants of m-payment adoption (Slade et al., 2015). However, satisficers are not interested in being the best in a social environment and when experiencing negative mood they are less likely to engage in such behavior.

Need for gratification from shopping activities

Consumers perform consumption behaviors not only for utilitarian reasons but also to fulfil hedonic gratification (Batra & Ahtola, 1991). Achieving gratification in

the form of hedonic reward enhances their mood (Babin et al., 1994). The need for gratification affects consumers' motivation towards certain actions that make them feel better. Seeking gratification in purchase activities is demonstrated as a personality trait that varies among consumers (e.g., Slessareva & Muraven, 2004). The need for gratification affects consumers' motivation towards an action (Arnold & Reynolds, 2003) and can explain in which situations they engage in mood maintenance or repairing behavior (Lee et al., 2013; Luo, 2002). In a purchase scenario, the need for gratification refers to purchase-related behavior that brings positive feelings (Tauber, 1972), reduces tension (McGuire, 1974), and helps consumers to escape from a negative state (e.g., Arnold & Reynolds, 2003). Gratification has been mainly tested in impulse purchase behavior. However, consumers' need for gratification can manifest in different purchasing activities, such as the adoption of web-based information services (Luo et al., 2011) and mobile services (Nysveen et al., 2005), as long as they promote positive feelings or distract individuals from negative emotions (Luo, 2002). Accordingly, we suggest that consumers' in-store m-payment usage decisions can also be affected by the need for gratification from shopping activities with the aim of receiving hedonic rewards that enhance their mood.

Through its directive impact, positive mood encourages individuals to perform certain behaviors to sustain their positive states (Gendolla, 2000; Gendolla & Brinkmann, 2005; Swinyard, 1993). People with a higher need for gratification are expected to be more inclined to engage in purchase-related behavior that can help maintain positive mood. The newness of a technology innovation creates a positive affective mood, which can influence individuals' perception of the rewards associated with adopting the technology (Wells et al., 2010). The adoption of new technologies and innovations is related to positive affect, such as arousal and excitement (Kulviwat

et al., 2007), which can enhance a consumer's mood. Excitement and heightened arousal are, indeed, two important gratifications that drive consumer behavior (O'Guinn & Faber, 1989). Therefore, those with a higher need for gratification, who seek pleasure and excitement through purchase-related activities, are more motivated to adopt in-store m-payment to enhance their positive mood, compared to those with a lower need for gratification.

Furthermore, the directive impact of mood suggests that individuals are motivated to avoid negative affective states and repair their negative mood (Gendolla, 2000). Mood-repairing behavior is greatly linked with the achieved gratification directly experienced by users (Rieger et al., 2014). Consumers who have a higher need for gratification have a stronger motivation to release their tension when experiencing negative mood compared to those who do not have a significant need for gratification. This leads to the display of a behavior that can repair the mood for those with a higher need for gratification. This behavior can simply act as a distraction from the negative mood (Wegener & Petty, 1994), which can divert the individual's mind away from a problem (Lee et al., 2001). Use of interactive media and technology has a significant effect on mood repairs through its distracting characteristics (Rieger et al., 2014). By contrast, those with a low need for gratification from shopping activities do not have the same strong motivation to engage with mood-repairing behavior and do not engage in consumption behavior as a way to enhance their mood.

Interaction between mood, gratification, and decision-making style

When people are experiencing positive mood, their affective state can act as information in behavior-related judgements (Schwarz & Clore, 1983). Satisficers, who are affected by the informational impact, use their positive mood as information and a

signal in their m-payment adoption decision. Additionally, they may aim to prolong their positive mood through their actions (Faber & Christenson, 1996); for example, they can choose to receive additional hedonic value and gratification from using m-payment (Kulviwat et al., 2007). Therefore, when satisficers are in a positive mood and have a higher need to receive gratification from shopping activities, they will be more willing to try m-payment. This is because they evaluate m-payment adoption positively and assume that it will bring them increased hedonic value, which will result in maintaining their positive mood. Comparably, when satisficers do not associate the purchase-related activities with feelings of gratification (lower need for gratification from shopping activities), their willingness and motivation to try a new payment method will be lower as they will not associate this with mood-maintenance behavior.

On the contrary, maximizers are less influenced by the informational impact of mood. When in a positive mood, maximizers rely on intensive cognitive processing of factual information. Their intentions towards using m-payment are less likely to be affected by their need for gratification because their decisions are not motivated by maintaining positive mood but are highly focused on maximizing the outcome and making the right rational choice. Thus, a three-way interaction among mood valence, an individual's decision-making style, and their need for gratification is expected:

For consumers experiencing *positive mood*,

H1a: satisficers are more likely to adopt in-store m-payment when they have a high need for gratification from shopping activities, compared to when they have a low need for gratification, whereas

H1b: maximizers' in-store m-payment adoption intentions are less likely to be affected by their need for gratification from shopping activities.

Furthermore, negative mood encourages actions that offer immediate gratification (Slessareva & Muraven, 2004). When experiencing negative mood, maximizers do not use their mood as a heuristic in their decision-making; instead, they are influenced by the directive impact of mood. Maximizers who have a higher need for gratification have stronger motivation to repair their negative affective state. Due to their reliance on social comparison (Cheek & Schwartz, 2016; Iyengar et al., 2006), they are more likely to treat the in-store m-payment adoption as a socially rewarding action that distracts them from, and alleviates, their negative mood. Compared to maximizers, satisficers are affected by mood informational impact; they simplify decisions and generally follow their feelings and instincts. When they experience negative mood, they use their negative feelings as information and a signal showing that the choice situation is problematic. They would, therefore, avoid the adoption decision. Consequently, regardless of their need for gratification, satisficers who experience negative mood consistently show low intentions towards adopting in-store m-payments. Therefore:

For consumers experiencing *negative mood*,

H2a: maximizers are more likely to adopt in-store m-payment when they have a high need for gratification from shopping activities, compared to when they have a low need for gratification, whereas

H2b: satisficers' in-store m-payment adoption intentions are less likely to be affected by their need for gratification from shopping activities.

15

Method

A scenario-based experiment was employed to examine the impact of mood valence on consumers' in-store m-payment adoption and to explore the moderating effects of their decision-making style and need for gratification. Scenario-based methodologies in which participants imagine themselves in the presented scenario are well established in consumer research and have, more recently, been employed in information system studies. They have been used to predict real-life behavior (Malhotra et al., 2004; Maxham, 2001; Rippé et al., 2017), study intention to adopt technology (Schaarschmidt et al., 2017), and examine consumer decision behavior in a store environment (Van Vaerenbergh and Holmqvist, 2013). It has been repeatedly confirmed that individuals respond to an experimental scenario in the same manner as they would to a similar actual experience (Schurr & Calder, 1986; Widmier & Jackson, 2002). Therefore, it is a suitable approach to examine consumer intention to use in-store m-payment, while allowing for their affective state to be manipulated.

Two scenarios were designed to cater for positive and negative mood treatments. Common methods of mood manipulation are asking participants to imagine or remember a situation that would leave them feeling good or bad and introducing mood-inducing stimuli that lead to the intended mood state, i.e., positive or negative (Poon, 2001). Scenario descriptions in an experiment help participants imagine themselves in the situation by creating a mental picture, which activates the stimuli in their minds (Schurr & Calder, 1986). Participants were asked to read the scenario to which they were randomly assigned carefully, imagine themselves in that situation, and try to recall how they felt in such a situation.

Previous studies show that consumers' mood is influenced by environmental stimuli (Law et al., 2012) and (un)pleasantness of an environment (e.g., Djamasbi et al., 2010; Miniard et al., 1992; Swinyard, 1993). To design the scenarios, we initially developed and piloted 28 simple texts based on seven environmental factors that affect an individual's mood: 1) product display; 2) music; 3) smell; 4) noise; 5) light, 6) cleanliness; and 7) product information. These attributes are shown to have a significant influence on an individual's mood state (Bruner, 1990; Küller et al., 2006; Pelet & Papadopoulou, 2012; Wu et al., 2008) and have been used to manipulate participants' mood in previous research (e.g., Baron, 1997; Di Muro & Murray, 2012; Park et al., 2005). Restaurants have been widely used in prior research to develop experimental scenarios in which different stimuli are manipulated (e.g., Kim & Lee, 2012; Milliman, 1986; Schurr & Calder, 1986); in addition, they provide a familiar setting to all participants, which facilitates the creation of mental imageries and activation of experimental stimuli in their minds; hence, this context was selected as our research setting. A pre-test with 30 participants was conducted to verify the experimental manipulation (mood valence) and the scenario design. Participants were requested to read the 28 texts carefully and recall similar scenarios that they had experienced. They rated each text with the manipulation check items that measured their mood after recalling the experienced situation: four seven-point scale items anchored at 1 as 'unhappy/bad/irritable/depressed' and 7 as 'happy/good/pleased/cheerful' were adopted from Swinyard (1993). The four items provided a single composite score (Cronbach's alpha = .84). Moderate rather than extreme statements were adopted for the experiment to help avoid the "overshadowing effect" (Fisher et al., 1979); thus, the final sets of statements (experiment descriptions) had a mean rating of between 1.5–3.0 (negative) and 5.0–6.5 (positive). Independent-samples t-test provided support for the

accurate mood valence manipulation [$M_{positive\ mood\ texts} = 5.77$, $SD = .59$, $M_{negative\ mood\ texts} = 1.82$, $SD = .44$, $t(28) = 41.82$, $p < .01$, Cohen's $d = 7.59$].

Measures

The seven-item Maximizing Tendency Scale (MTS-7) on a seven-point scale (from '1 – strongly disagree' to '7 – strongly agree'), proposed by Dalal et al. (2015), measured the decision-making style. Cheek and Schwartz (2016) compared and evaluated the existing 11 maximization tendency scales and suggested that this scale most closely describes the traits of maximizers (high in maximization tendency) and satisficers (low in maximization tendency). To evaluate the intention to adopt in-store m-payment, two items from Venkatesh and Davis (1996) were adapted; this scale has been used in other m-payment studies such as that of Lu et al. (2011). The need for gratification from shopping activities was measured using the three-item scale developed by Arnold and Reynolds (2003). In addition, six items from technology adoption literature were adapted to control for ease of use and usefulness (Davis, 1989; Gefen, et al. 2003; Legris et al., 2003; Venkatesh & Davis, 1996). The validity of these scales is well-established in prior studies and these items are previously used in new technology adoption and consumer psychology research, which is similar to our research context. Appendix B shows the measurements.

Study procedure

In total, 170 male and 152 female UK participants, aged over 19, who self-reported that they had never used in-store m-payment, but held smartphones that supported these services, were recruited via Prolific Academic (ProA) (https://www.prolific.ac). The data quality of this platform is higher than other

crowdsourcing platforms for conducting online experiments (Peer et al., 2017). Compared to other crowdsourcing platforms such as Amazon Mechanical Turk (MTurk), researchers have found that participants on ProA tend to be more diverse and honest (Peer et al., 2017; Palan & Schitter, 2018). In our sample, 65% of the participants had a college or university degree and 80% had more than a year of work experience.

After reading the participant's information sheet and agreeing to the ethical terms, participants were randomly assigned to one of the two groups (positive or negative mood scenario: see Appendix A). For each group, the mood induction task was introduced which ended with a general question about the shop. Then participants were asked to move on to the next task/scenario. There were no significant differences among the randomly assigned groups in terms of demographics ($p > .05$). During the second task, participants read a scenario that described a situation in which they select a product in a shop and go to the till to pay. They were then asked about their intentions to use in-store m-payment to make their payment. To avoid an inflated strength of relationships between the independent variables and the dependent variable (e.g., Hautz et al., 2014), the mood manipulation check items were reported after participants answered the question about their adoption intentions, by asking them to recall how they felt after the first scenario (e.g., Adaval, 2001). Finally, they answered questions on their demographics, the perceived ease of use and usefulness of m-payment, their decision-making style, and their need for gratification from shopping activities.

Results

The responses to the MTS-7 (Cronbach's alpha = .92), the need for gratification from shopping activities (Cronbach's alpha = .93), in-store m-payment usage intention (Cronbach's alpha = .84), perceived ease of use (Cronbach's alpha = .86), and perceived

usefulness (Cronbach's Alpha = .87) showed appropriate internal consistency. A CFA (conducted by using AMOS 26) indicated an adequate fit for the five-construct measurement model (decision-making style, need for gratification, perceived ease of use, and usefulness of m-payment and intention to adoption): $\chi^2 = 147.534$, df = 115, CFI = .992, RMSEA = .03, SRMR = .042. The factor loadings ranged from 0.75 to 0.94. This supported that the scale items converged well to the corresponding variable and it was, thus, acceptable to go forward using these scales. The average of seven MTS-7 items provided a single composite score and the median split identified maximizers and satisficers (Mdn = 4.23, similar to previous research, e.g., 4.20 in Schwartz et al., 2002). There is substantial theoretical and empirical support in the literature for the actual split between maximizers and satisficers on the maximization tendency scale. In particular, the establishment of decision-making style as a trait, suggested by Schwartz et al. (2002), clearly classifies individuals into maximizers and satisficers, which is operationalized by a median split. Existing literature has consistently followed Schwartz's approach (e.g., Iyengar et al., 2006; Karimi et al., 2015; Liu et al., 2016; Schwartz et al., 2002; Weaver et al., 2015). For further verification, a two-step cluster analysis using these seven MTS items (BIC clustering criterion: IBM SPSS 25) produced two clusters that accurately reproduced the median split classification (See Appendix C). This provided further confidence to continue with the median split classification. The three items of need for gratification were also combined to make a single composite score and the median (Mdn = 4.33) was used to split high and low levels of gratification. An independent-samples t-test supported the manipulation of mood [M $_{positive\ mood}$ = 5.66, SD = .80, M $_{negative\ mood}$ = 1.85, SD = .73, $t(320)$ = 41.82, p < .01, Cohen's d = 4.98].

Hypothesis testing

A two (positive mood/negative mood) by two (maximizers/satisficers) by two (high need for gratification/low need for gratification) three-way ANCOVA showed a significant three-way interaction [$F(1, 312) = 54.02$, $p < .01$, $\eta^2 = .52$] (see Table 1). Perceived ease of use and usefulness were set as covariates.

Table 1: Results of the three-way ANCOVA

Tests of Between-subject Effects					
Dependent variable: Intention to adopt m-payment					
Source	Type III SS	df	MS	F	Sig.
Corrected model	189.319	9	21.035	41.766	.000
Perceived ease of use *(covariate)*	.566	1	.566	1.123	.290
Perceived usefulness *(covariate)*	1.418	1	1.418	2.815	.094
Need for Gratification (NG)	47.904	1	47.904	95.112	.000
Decision-making style (DMS)	1.579	1	1.579	3.135	.078
Mood (MO)	81.784	1	81.784	162.381	.000
NG * DMS	.048	1	.048	.096	.757
NG * MO	.241	1	.241	.478	.490
DMS * MO	28.874	1	28.874	57.330	.000
NG * DMS * MO	27.208	1	27.208	54.021	.000
Error	157.141	312	.504		
Corrected Total	346.460	321			

A significant three-way interaction means that there is a two-way interaction that varies across levels of a third variable (Kirk, 1995). To test H1, the dataset was split by the variable "mood valence" to test its simple main effects. A pair of two-way ANCOVA then tested the two-way interaction between the need for gratification from shopping activities and decision-making style at both positive and negative mood conditions, controlling for perceived ease of use and usefulness.

The first two-way ANCOVA tested the two-way interaction effect between the need for gratification and decision-making style on the intention to adopt m-payment when an individual is in a *positive mood*. The results showed that the two-way interaction effect was significant [$F(1, 154) = 24.72$, $p < .01$, $\eta^2 = .34$] (see Figure 2). Bonferroni's post-hoc test showed that satisficers with a higher need for gratification

21

have a significantly higher intention to adopt in-store m-payment compared to those with a lower need for gratification [M satisficer, positive mood, high need for gratification = 5.88, SD = .71 vs. M satisficer, positive mood, low need for gratification = 4.60, SD = .73, p < .01, Hedges' g = 1.78]. When in a positive mood, maximizers' adoption decisions are not affected by their need for gratification [M maximizer, positive mood, high need for gratification = 4.62, SD = .69 vs. M maximizer, positive mood, low need for gratification 4.45, SD = .70, p = .29 (n.s), Hedges' g = .24]. Therefore, H1a and H1b were supported.

The second two-way ANCOVA tested the interaction effect in the *negative mood* condition. The results revealed a significant two-way interaction on m-payment adoption [$F(1, 156) = 28.29$, p < .01, η^2 = .42] (see Figures 2 and 3). Bonferroni's post-hoc test demonstrated that when individuals experience negative mood, maximizers with a higher need for gratification are significantly more willing to try in-store m-payment, compared to those with a lower need for gratification [M maximizer, negative mood, high need for gratification = 4.84, SD = .65 vs. M maximizer, negative mood, low need for gratification = 3.41, SD = .73, p < .01, Hedges' g = 2.07]. In addition, satisficers' in-store m-payment adoption is similar for those with a high or low need for gratification under this mood condition [M satisficer, negative mood, high need for gratification = 3.75, SD = .74 vs. M satisficer, negative mood, low need for gratification = 3.52, SD = .75, p = .17 (n.s), Hedges' g = .31]. Thus, H2a and H2b were supported.
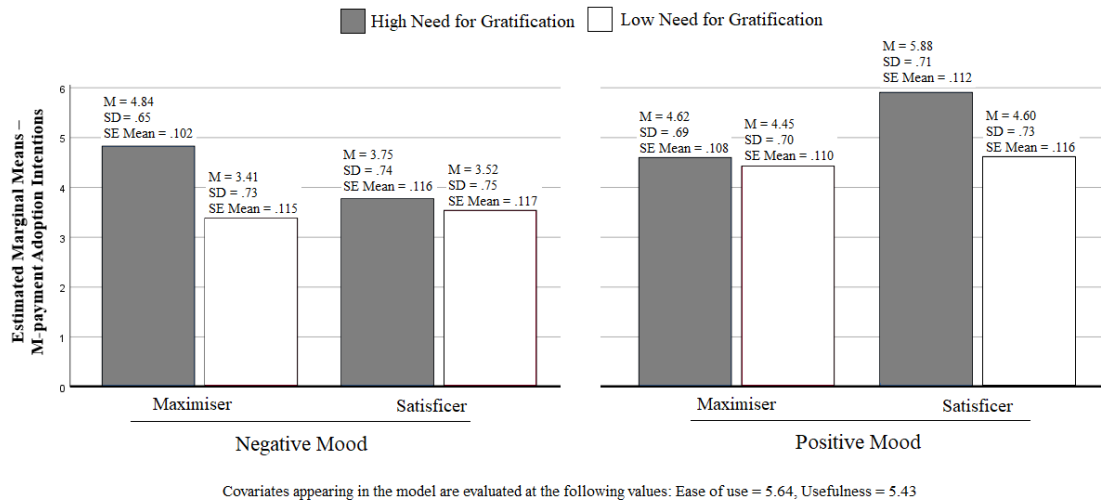
Figure 2: The three-way interaction between mood, need for gratification, and decision-making style
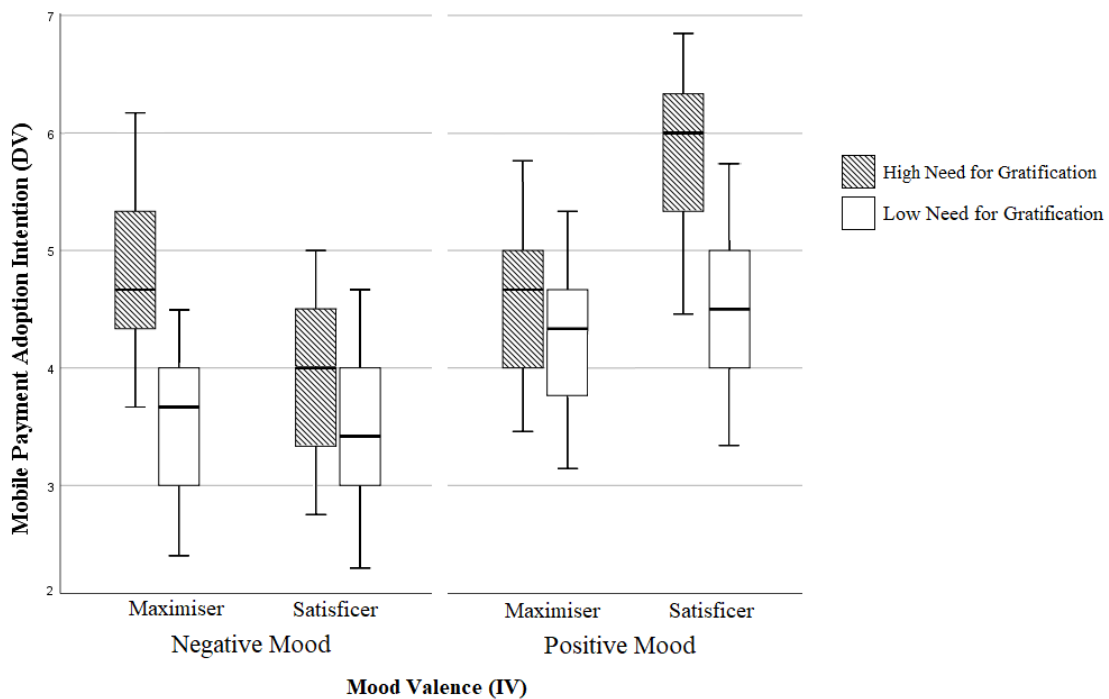

Figure 3: Data distributions of each experimental group

The typical technology acceptance factors "perceived ease of use" and "perceived usefulness" were not the foci of this study; however, the findings in relation to these variables were interesting. We found no significant result for the impact of

perceived ease of use [$p = .29$] and only a marginal effect for perceived usefulness [$p = 0.09 < .1$, $\eta^2 = .02$ (a weak effect size; Richardson (2011); Cohen (1969, pp.278–280)]. The results indirectly support the claim (e.g., Gulati et al., 2015) that perceived technology-related benefits are insufficient to encourage customers' change of payment habits and are not strong enough to predict and stimulate the adoption of in-store m-payment.

Summary and Discussions

The results support our assumptions that consumers' mood valence has a diverse effect on their technology adoption behavior, depending on their decision-making style and need for gratification from shopping activities. We show that when satisficers experience positive mood, their intention to use m-payment depends on the degree to which they receive gratification from shopping-related activities. Satisficers use their positive mood as a heuristic and information in their decision-making; they simplify decisions and follow their feelings and perceptions. When in a positive mood, satisficers believe that everything is going well; they are more confident and open to new experiences (Fredrickson, 2001). Those satisficers with a higher need for gratification from shopping activities associate more hedonic value to purchase-related behaviors that can maintain or enhance their positive mood compared to their counterparts. Adopting a new in-store payment service is evaluated as being positive in decision making by offering them additional hedonic value and gratification during the shopping process (Kulviwat et al., 2007). Therefore, they are more likely to adopt the m-payment compared to those satisficers with a lower need to receive gratification from shopping activities. Findings further indicate that maximizers make decisions by relying on the intensive cognitive processing of factual information. Hence, when in a

positive mood, their m-payment adoption decisions are not affected by emotional drives and need for gratification.

Furthermore, the results reveal that when experiencing negative mood, maximizers with a higher need for gratification are more likely to use m-payment services. This behavior can be perceived as an action that enhances their social image (Cheek & Schwartz, 2016; Lu et al., 2005) and improves their negative mood (Iyengar et al., 2006; Yang et al., 2012). Therefore, these maximizers are more inclined to use in-store m-payment compared to those maximizers who have a lower need for gratification and do not associate this behavior with gaining gratification and mood-repairing values.

Contributions and implications

By drawing on the MBM and the AIM, this study reveals how consumers' affective states, such as mood, can have a significant impact on their behavior. It contributes to technology adoption and consumer research literature by identifying mood as an antecedent of intention and illustrating that mood can significantly alter consumer intention to adopt in-store m-payment. Understanding which individual differences are determinant in consumers' technology adoption is pivotal (Shaw et al., 2018). Findings also demonstrate that the impact of mood on adoption behavior is moderated by personality traits of decision-making style and need for gratification. This suggests that the utility of a new technology is not the only determinant of consumers' adoption decisions (Lwoga & Lwoga, 2017); however, the affective states of consumers also influence their feelings and motivations towards using technology and define their technology adoption behavior. It provides empirical evidence for mood being an underlying context for our thought processes and behavior (Forgas & George, 2001).

This study also informs psychology research on the impact of mood in human behavior by providing empirical evidence from a consumer technology adoption context.

Furthermore, this research contributes to the individual differences and consumer decision-making literature by demonstrating that interrelations of individual's states and traits define their intention and choice behavior. Personality traits play a significant role in how mood affects consumers' choices. We show that maximizers and satisficers not only have different motives when making decisions (Ma & Roese, 2014), but that they are also affected differently by their positive/negative mood. It is important to note that the central focus of this study is on mood and its interaction effect with decision-making style and need for gratification, rather than extending current technology acceptance models. However, this might be of interest for future research.

Establishing mood as a significant variable that explains the technology adoption behavior of consumers and demonstrating conditions under which mood operates have useful practical implications. While companies do not have control over consumers' initial mood, they can influence factors that can facilitate positive mood in different consumer touchpoints, which can significantly encourage m-payment adoption decisions. Changes to consumer mood can be achieved by the choice of atmospherics in store and interface design (Di Muro & Murray, 2012; Grayson & McNeill, 2009; Wu et al., 2008). In addition, this research informs managers on a very interesting consumer segmentation approach based on the individual characteristics of decision-making style and the need for gratification. This segmentation can explain how the decisions and behavior of each group are derived by different motivations. Satisficers are more strongly influenced by the informational impact of mood. They use their mood as information in their decision making. Maximizers are influenced by the

directive impact of mood. They alter their habitual behavior when hedonic motives are triggered, particularly when experiencing negative mood. Those with a higher need for gratification from shopping activities are more responsive to their emotional states. Satisficers respond directly to their mood in their decision making; while being very open to behavioral changes due to positive mood, they see negative mood as a warning. Therefore, creating positive mood in them has a clear impact on their decisions. To influence satisficers, business owners need to carefully observe and understand customers' perceptions of an enjoyable experience that enhances their mood. Maximizers, on the other hand, respond to mood in a different way by getting motivated to enhance their emotional states. Therefore, marketing messages should focus on conveying to maximizers that "doing something" such as adopting a new technology or buying a new product can make them "the winner" and improve their social image. Advertising messages should focus more on hedonic values received from the use of m-payment rather than its functionality. Understanding maximizers and satisficers and the influence of need for gratification empowers businesses to stimulate and customize their marketing promotions for new services. Our findings on the differential impact of affective states on decision makers, maximizers, and satisficers, also has practical implications for the design of decision support systems.

Additionally, businesses should aim to increase consumers' need for gratification from shopping activities, as it has a significant impact on their willingness to try new products and services. For instance, m-payment service providers should work with their retailing partners to associate the desired behavior with receiving gratification that can be a solution for consumers' overall affective state.

Limitations and future research directions

There are a number of limitations associated with this research. Despite many advantages of the scenario-based experimental method used in the present study (e.g., Howitt & Cramer, 2014), the artificiality of the setting may not reflect real-life experiences. Future studies are encouraged to adopt other methodologies to examine the effect of mood on technology adoption. Moreover, we have used restaurants as the context of scenario design due to their common use in prior research (e.g., Milliman, 1986) and the familiarity of the setting for participants. Other research could test the impact of mood, decision-making style, and need for gratification in different contexts.

Although the aim of this study is to empirically test the disparate impact of mood on adoption decisions of different individuals, our findings show that mood is an important predictor of technology adoption. Future studies that aim to test or expand predictive models of technology adoption are encouraged to consider mood's direct and interactive effects along with other technology-related factors. This study adapted well-established measurement scales from previous research that have been tested with different samples; future studies that aim to refine and improve scales or conduct studies that involve participants with substantial different background should consider testing for measurement invariance to ensure that the same construct is being measured across specified groups.

Predominantly, two research paradigms have emerged to explain the technology adoption. One widely explored paradigm is focused on technology's attributes (e.g., TAM), while the other considers how individual propensities explain the use and adoption of new technologies (Godoe & Johansen, 2012; Porter & Donthu, 2006) As highlighted previously, the literature has mainly focused on the former paradigm –

technological aspects of m-payment – and research on individual differences is still scarce. This paper, to our knowledge, is the first to examine the impact of mood and individual differences on in-store m-payment adoption. It provides evidence for the importance of individual differences and contributes to the extant research on the latter paradigm. Although we included and controlled the two main technology-related variables in our models, our focus was mainly on the impact of individuals' mood states and personality traits. However, we propose that other technology-related attributes, such as perceived risk, could be considered and the two paradigms could be tied together in a stronger manner. We hope to draw researchers' and practitioners' attention to the importance of affections and personality traits in changing the habitual behavior of consumers.

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Appendix A

Experiment scenarios

Please read the following scenarios carefully, imagine yourself in that situation, and recall how you felt when having a similar experience:

This is a usual working day. You put on the suit that you bought over the weekend and leave your flat/house for work. During the lunch break, you walk into a coffee shop that you have never visited before – it is close to your office. You want to buy lunch and get a drink.

Positive mood scenario

The design of the shop is simple and pleasant. The display and layout of the products is well spaced and well organized. The environment is clean and comfortable. The smell in the shop is pleasant. The space is roomy. The lighting is bright. The music is relaxing and not too loud. Although there are other customers chatting in this coffee shop, it is not too noisy. It is easy to find all the product information (e.g., calories, size, and price). The staff seem friendly and they smile at you.

The prices of the products are similar to other coffee shops.

Negative mood scenario

The design of the shop is too complex and oppressive. The display and layout of the products is not very well spaced and looks disorganized. The shop is not very clean, and the environment is uncomfortable. The space is cramped. The smell in the shop is not very pleasant. The lighting is quite dark. The music is loud. There are other customers in this coffee shop, and it is noisy because everyone is speaking loudly. It is not very easy to find all the product information (e.g., calories, size, and price). The staff seem to be busy and do not smile.

The prices of the products are similar to other coffee shops.

Appendix B. Measures

Item	Source
M-Payment adoption intention	Venkatesh & Davis (1996); Lu et al. (2011)
INT1 If I have my mobile that supports mobile payment services with me, I intend to try it.	
INT2 Given that I have access to the mobile payment services, I predict that I would use it.	
Need for gratification from shopping activities	Arnold & Reynolds (2003)
GRA1 When I'm in a down mood, I go shopping to make me feel better.	
GRA2 To me, shopping is a way to relieve stress.	
GRA3 I go shopping when I want to treat myself to something special.	
Maximization tendency (MTS-7)	Dalal et al. (2015); Cheek & Schwartz (2016)
MTS1 I don't like having to settle for good enough.	
MTS2 I am a maximizer.	
MTS3 No matter what I do, I have the highest standards for myself.	
MTS4 I will wait for the best option, no matter how long it takes.	
MTS5 I never settle for second best.	
MTS6 I never settle.	
MTS7 No matter what it takes, I always try to choose the best thing.	
[*Covariate*] *Ease of use (of M-Payment)*	Davis (1989); Legris et al. (2003); Gefen, et al. 2003 Venkatesh & Davis (1996)
EU1 I think it would be easy to become skillful at using m-payment.	
EU2 Learning to use m-payment would be easy.	
EU3 Using the m-payment would not require a lot of my mental effort.	
[*Covariate*] *Usefulness (of M-Payment)*	
USE1 M-payment would enable me to pay faster.	
USE2 M-payment would enhance my effectiveness in payment.	
USE3 M-payment would be useful when I need to buy products.	

Appendix C

There is substantial theoretical and empirical evidence that suggests individuals can be classified into two distinct groups based on their decision-making style (maximizers and satisficers). This classification is rooted in the definition of maximizer and satisficer by Schwartz et al. (2002) and is widely implemented in the extant literature through the use of median split. As suggested by MacCallum, Zhang, Preacher, and Rucker (2002), the existence of two groups needs to be examined. Therefore, to further verify the appropriateness of this commonly used approach, i.e. splitting maximiser and satisficer, we conducted a two-step cluster analysis. This procedure can reveal natural groupings (clusters) within the dataset, as the algorithm offers automatic selection of number of clusters by comparing the values of a model-choice criterion across different clustering solutions; the procedure automatically determines the optimal number of clusters. After the two-step clustering (Steps 1 & 2), we compared the classification result with the median split result (Steps 3 & 4).

The two-step cluster analysis indicated that two clusters would be the most optimal classification, which is consistent with the median split. Next, the result of the cluster analysis showed that the two groups were accurately reproduced. Participants in cluster 1 have relatively low scores on all 7 MTS items and can be identified as satisficers, whereas the participants in cluster 2 scored relatively high on all items and can be identified as maximizers.

This procedure supports the existence of two groups of individuals and confirms the classification approach used in previous studies (Step 1 & 2). In addition, the two-step clustering solution (Step 3) accurately reproduced the median split result (consistent with the median split classifications, Step 4). This gives further support that adopting the original scale and following the steps of the existing studies is appropriate in our case.

Step 1: Conduct median split and save the clustering members;
Step 2: Conduct two-step clustering analysis (Schwarz's Bayesian Criterion, BIC was adopted);
Step 3: Create cluster membership variable;
Step 4: Compare the clustering result and the median split results.