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The role of implicit lay belief, SEC attributes and temporal orientation in consumer decision-making

Abstract

The current research extends the application of implicit theories to consumer behavior. We engage the search, experience, credence (SEC) framework to study the impact of consumer lay belief on attribute types and time orientation on the choice of a product/service. We conduct one pre-test, and three experiments to explore the key hypotheses. Our findings show that incremental (vs. entity) theorists prefer a product/service when it is positioned in terms of experience (vs. credence) over credence (vs. experience) attributes. This effect is mediated by attribute importance. The preference of entity and incremental theorists is maintained under present-time orientation. Under future-time orientation, incremental theorists still maintain their preference, but entity theorists demonstrate a preference reversal and favour the experience over credence attributes. The findings contribute to theoretical and managerial extensions of the existing literature on consumer behaviour.

Keywords: search, experience, credence attributes, implicit belief, time orientation, attitude and intention

1. Introduction

Regardless of its long history in social psychology (see Han & Stieha, 2020 for a recent review), the application of implicit or lay theories to consumer behaviour is only starting to make inroads in scholarly work (Wheeler & O'neill, 2016). Although a handful of past studies have examined the implications of lay theories for consumer behaviour (Park & John, 2010; 2012; Yorkston, Nunes & Matta, 2010; Mathur, Jain & Maheswaram, 2012), it was Murphy & Dweck's (2016) "provocative and compelling" article (Rucker & Galinsky, 2016:161) that drew scholarly attention to the considerable potential of implicit theories on consumer behaviour. Yet, since then, the literature linking implicit theories to consumer behaviour research has remained thin (Carnavale, Yucel-Aybat & Kachersky, 2017; Song, Lee & Kim, 2019; Anisman-Razin & Levontin, 2020). Given the call for further research in this area (Murphy & Dweck, 2016; John & Park, 2016; Wheeler & O'neill, 2016), our objective with the current paper is to extend the scope of implicit or lay theories into the understudied domain of consumer behaviour.

In everyday life, individuals engage lay theories to interpret and understand the world around them. For example, lay theories have been applied to understand a wide range of phenomena such as cultures, groups, organisations, consumer attitudes and product choices, amongst others (Kwon & Nyakanpukkam, 2015; Murphy & Dweck, 2010; Park & John, 2010). In the current work, we argue that consumers' lay belief will moderate the influence of search, experience and credence (SEC) attributes on product/service decisions. The SEC framework (Nelson, 1970; Darby & Karni, 1973) posits that search attributes can easily be determined before purchase, while experience attributes are mostly verified during consumption. Finally, consumers are not able to evaluate credence attributes even after use (Ekelund, Mixon, & Ressler, 1995; Nelson, 1970). The SEC framework has been suggested as a useful product classification framework (Tulay & Dion, 2009). However, extant research

encourages further analysis of this framework – particularly the role of experience and credence attributes – on consumer decision-making (Mortimer & Pressey, 2013; Roy & Naidoo, 2017).

Additionally, we further argue that the way prospective consumers initially engage with product attributes may also be contingent on their temporal orientation. We suggest a new nuance to the relationship between SEC attributes and implicit lay belief, in the form of time orientation; defined as a cognitive temporal bias towards the past, present or future (Zimbardo & Boyd, 1999). In essence, in the current study, we postulate a three-way interaction between lay belief, SEC attributes and time orientation to explain consumer decision-making. To the best of our knowledge, the theoretical framework proposed and studied in this research is original and has not been attempted before.

Our aim with the current work is to fill the following research voids. First, we address the call, as mentioned earlier, for further work on implicit theories applied to a consumer behaviour domain (Murphy & Dweck, 2016; John & Park, 2016; Wheeler & Omair, 2016). We specifically address the extant call for extending the literature on lay theory by examining the influence of moderating variables on the consumer behaviour response of entity and incremental theorists (Kwon & Nyakanpukkam, 2015; Park & John, 2010). Second, we focus on the role of experience and credence attributes in decision-making, a gap noted in the SEC literature (Mortimer & Pressey, 2013; Roy & Naidoo, 2017). Our work shows that subjects with different implicit lay beliefs, demonstrate differential preferences for experience and credence features. Third, Simons et al. (2004, p. 136) posit that “the motivational role of the dynamic aspect of FTP – future-time perspective – has received less attention”. Studying time orientation is an essential line of inquiry, given its significance in the life of consumers (Worrell & Mello, 2007; Zimbardo & Boyd, 1999). The current work focuses on the role of time orientation as a moderator to the relationship between implicit lay belief and SEC

attributes. In essence, our work proposes and studies a unique three-way interaction. Our findings add to an enhanced understanding of the underlying mechanism guiding consumer decision-making based on theories of lay belief, SEC attributes and time orientation.

In making these contributions, we first begin with a theoretical review, leading to our key hypotheses. This is followed by a single pre-test and three experimental studies that are conducted to provide empirical support to our theorising. Finally, the contributions of our findings are discussed, followed by managerial implications and directions for future research.

2. Literature review

2.1 SEC attributes

The concept of goods and services as a bundle of attributes is well established in the marketing literature (Ekelund, Mixon, & Ressler, 1995). Following this conceptualisation about products and services, the economics of information (EOI) literature first described three different types of attributes; namely search, experience and credence, also referred to as the SEC framework (Nelson, 1970; Darby & Karni, 1973). Search attributes are defined as attributes which consumers can determine before purchase (e.g., price), while experience attributes are verified while consuming the product (e.g., taste). Finally, credence attributes such as ethical manufacturing cannot be evaluated even after the product consumption (Wu, Swait, & Chen, 2019).

An alternate approach to defining SEC attributes is based on the level of information available, or the cost/difficulty with which consumers procure and evaluate attribute information for decision-making (Lim & Chung, 2011). From this conceptualisation, search information is readily available and can be verified before consumption, while details regarding experience attribute are likely to be available only during use. Finally, information on credence attributes is not readily available (i.e., information asymmetry) and is further

challenging to verify, even after considerable time has passed following consumption (Lim & Chung, 2011).

In the marketplace, second-hand sources such as advertisements can inform consumers about search attributes (Hsieh, Chiu, & Chiang, 2005). Compared to search attributes, consumers would like to use information from their first-hand product consumption to verify experience attributes (Roy & Naidoo, 2017). Distinguishing between attribute types can also be based on consumer perceptions. For example, marketers can release first-hand product experiences of other consumers (e.g., reviews) to convert an experience attribute into a search attribute. Still, in reality, such transformation cannot be fully achieved (Yang & Mai, 2010). Previous research shows that consumers typically tend to be more skeptical of subjective information, and hence motivated to experience it personally (Ford, Smith, & Swasy, 1990). The evidence further shows that for experiential consumption (e.g., hedonic attributes), consumers often evaluate these attributes during first-hand use (Weathers, Sharma, & Wood, 2007).

While comparing SEC attributes, consumers seem to be most skeptical of credence attributes (Srinivasan & Till, 2002). However, current findings suggest that since credence attributes cannot be verified (i.e., these attributes inherently suffer from information asymmetry), such claims are often accepted at face value and as truthful (Atkinson & Rosenthal, 2014; Nelson, 1970). Atkinson & Rosenthal (2014) further demonstrate that third-party certifications such as eco-labels are engaged to help consumer decisions. These authors argue that in the face of information asymmetry, consumers are unable to verify credence attributes (e.g., organic) and its signalling abilities (e.g., healthy). They hence rely on eco-labels to verify the credibility of such claims (Atkinson & Rosenthal, 2014). Similarly, past research suggests that certifications (such as eco-labels) essentially endorse the signalling quality (e.g., environmental friendliness) of a credence attribute (e.g., dolphin-safe tuna) and

reduce information asymmetry (Balineau & Dufeu, 2010). Several other studies, especially in the food choice context, further confirm the signalling qualities of credence attributes (e.g., free-range signalling quality – see Fernqvist & Ekelund, 2014 for a recent review of this literature).

Previous work has demonstrated that not all types of attributes may be relevant for choice and ultimately, decision-making (Yang & Mai, 2010; Wright & Lynch, 1995). Hsieh et al. (2005), for example, suggest that different types of products/services will dictate the relevance of specific attributes on the SEC framework. They argue that certain products/services (e.g., educational services) are exemplified mainly by experiential and credence qualities. Extending this line of reasoning, in our current study, we highlight the role of experience and credence attributes in the context of product/service decision-making. As previously mentioned in our introduction, the choice to study experience and credence attributes is based on the scholarly recommendation to understand the influence of these attributes on consumer decision-making (Mortimer & Pressey, 2013; Roy & Naidoo, 2017).

2.2 Implicit theory

Klein (1998) suggests that consumer characteristics can guide preference for SEC attributes. One such feature, which we examine in this study is the concept of implicit beliefs (i.e., mindsets). Implicit or lay belief about the self is a widely studied phenomenon and relates to the malleability of human personalities (Mukhopadhyay & Yeung, 2010). The implicit theory framework, developed by Dweck and her colleagues (Dweck & Leggett, 1988; Dweck, Chiu, & Hong, 1995; Chiu et al., 1997; Hong et al., 1999; Dweck, 2000; Mukhopadhyay & Yeung, 2010) subscribes to two different belief systems: incremental vs. entity. In her more recent research, Dweck (2006) introduced the labels of ‘fixed’ and ‘growth’ mindsets, to respectively refer to entity and incremental theory. Under incremental theory, people believe their personal qualities to be malleable, while entity theorists view personal qualities as fixed

(Dweck, 2000; Park & John, 2010). The way people subscribe to these views have further implications for their judgment and behaviour (Dweck, 2000; Jain, Mathur, & Maheswaran, 2009; Burnette, 2010; Park & John, 2010).

Depending on whether one has a preference for entity or incremental theory, people can undertake different approaches related to the self. Incremental theorists believe that personal qualities can be improved through applying effort. Consequently, they seek ways for personal development through opportunities for self-improvement, learning and growth (Park & John, 2010). For example, incremental theorists might study difficult subjects even at the risk of failure to engage in effortful self-development as they believe such actions will help them become more competent (Dweck & Bempechat, 1983; Dweck & Leggett, 1988). Further, incremental theorists tend to exhibit higher persistence while doing complicated tasks, such as challenging segments of exercise and exhibit better-coping strategies in the face of adversity or setback (Kasimatis, Miller & Marcussen, 1996; Dweck, 2000).

Entity theorists, on the other hand, believe that personal qualities cannot be changed through their effort to learn, improve and grow (Park & John, 2010). For example, entity theorists might study easier subjects, or hand in their assignments first in class to signal themselves in a positive light (e.g., smartness), even though these actions might not lead to skills development (Dweck & Bempechat, 1983; Dweck & Leggett, 1988). Similarly, Park & John (2010) show that entity theorists may use branding cues (e.g., carrying a pen with the logo of a prestigious university) to signal a positive self. Further, while doing difficult tasks such as challenging exercise, entity theorists demonstrate lesser persistence in comparison to their incremental counterparts and adopt less effective coping strategies in the face of adversity (Dweck, 2000; Kasimatis et al., 1996). For example, following a hypothetical set back in terms of dieting, entity (vs. incremental) theorists are more likely to disengage from

pursuing their goals (Burnette, 2010). Appendix 1 provides a synthesis of the critical dimensions of implicit theories and mindset.

Past research has shown that the motivation of entity theorists can be undermined by engaging strategies that support their mindset. For example, Yeager & Dweck (2012) argued that providing praise for struggling students can lead to entity belief and unintentionally undermine resilience. Rattan et al. (2012) further illustrated this dynamic. They reported that when instructors provided easy (vs. challenging) tasks and encouraging feedback to students who believed they had a fixed level of intelligence, those students felt discouraged and reported lower expectations of their performance (Rattan et al., 2012). Although well-intentioned, the authors argue that encouraging feedback to make entity theorists feel better, actually backfired and were further detrimental to the students' long-term expectations and outcomes (Rattan et al., 2012).

Similarly, an environment that endorses a specific lay belief (e.g., an organisation focusing on performance) can encourage individuals to internalise such values and shift their self-presentations to display more motivational characteristics (Murphy & Dweck, 2010). Two key dimensions emerge from this discussion. First, limited studies (e.g., Rattan et al., 2012; Yeager & Dweck, 2012) demonstrate that despite low or fixed perceived ability, conducive interventions may not always encourage entity theorists to perform better. Second, when discerning signals are present in the environment, people can adapt and mould themselves to this environment (Murphy & Dweck, 2010). In the present study, we argue time orientation is one such moderator that influences the consumer behaviour response of entity and incremental theorists. The choice of time orientation is guided by previous calls to explore this important line of inquiry given the significant influence of time orientation on consumer lifestyle (Worrell & Mello, 2007; Zimbardo & Boyd, 1999). Indeed, time

orientation has been noted as a significant construct that drives consumption behaviour (Legohérel et al., 2009).

2.3 Time orientation

Initially proposed by Zimbardo & Boyd (1999), the theory of time perspective considers that human beings organise their personal and social experiences according to different temporal frames. These temporal dimensions are referred to as the past, present and future. An individual maintains a cognitive temporal bias towards being past, present or future-oriented, which in turn decides how one is going to respond to decision-making in life (Worrell & Mello, 2007). Time perspectives are generally considered fluid in nature with individuals expected to maintain a balance between the different temporal orientations. Achieving such a balance could be driven by situational demand, assessment of resources and personal or social appraisal (Zimbardo & Boyd, 1999). Maintaining balance can also be motivated by an individual's strategic effort to achieve new goals or avoid adverse consequences (Horstmanshof & Zimitat, 2007).

Having a present-time orientation causes an individual to focus on behaviour with immediate rewards and is often associated with fatalism and lack of control (Rothspan & Read, 1996). On the other hand, a future orientation provides a clear vision of the future and more importantly guides an individual about the effects of present actions on future outcomes (Rothspan & Read, 1996). Both these time orientations have implications for human behaviour. For example, present-time orientation has been associated with riskier behaviour like unsafe driving and sexual practices (Zimbardo & Boyd, 1999), while a future orientation may promote a healthy lifestyle including exercising, eating habit and safe sex (Luszczynska et al., 2004). Present-time orientation has been found to focus more on immediate cues (e.g., partying), even at the cost of sacrificing long-term sound decisions like academic pursuit (Lasane & Jones, 1999). A future orientation, on the other hand, can encourage a long-term

focus and higher engagement with goal pursuit (Lasane & Jones, 1999; Simons et al., 2004). Researchers have recommended that interventions based on future-time orientation can mitigate against failure and prevent early departure from pursuing long-term goals such as academic aspirations (Horstmanshof & Zimitat, 2007). Based on the above, future (vs. present) time orientation can, therefore encourage more conscientious decisions, driven by higher levels of motivation to work for a better future.

2.4 Hypotheses development

As previously established under the literature on implicit belief, incremental theorists lean towards personal development efforts that help them to self-improve, learn and grow, while their entity counterparts engage in a less effortful approach (Park & John, 2010). As discussed earlier, prior research shows that incremental (vs. entity) theorists expend more effort as they believe that personal qualities like intelligence are expandable through effort and learning (Murphy & Dweck, 2010). This is further evidenced through incremental theorists' performance on demanding tasks (e.g., challenging exercise, studying difficult academic subjects) and persistently engaging with taxing weight loss goals (Dweck & Leggett, 1988; Kasimatis, Miller, & Marcussen, 1996; Dweck, 2000; Burnette, 2010).

Applying this line of reasoning to the context of consumer decision, we advocate that incremental theorists are more likely to prefer a product/service positioned on experience (vs. credence) attributes because such attributes provide them with the opportunity for personal development. On the other hand, their entity counterparts will prefer credence (over experience) attributes. These attributes (e.g., building tomorrow's leaders, cutting edge fitness plan) being relatively challenging to verify, may provide an easy opportunity for entity theorists to signal a positive self to others. Prior research shows that credence attributes possess signalling qualities (Fernqvist & Ekelund, 2014; Atkinson & Rosenthal, 2014; Balineau & Dufeu, 2010). We argue that in the face of information asymmetry, credence (vs.

experience) features provide more opportunities to signal a positive self. Further, past findings suggest that entity (vs. incremental) theorists are more likely to engage such signals to show themselves in a positive light (Park & John, 2010). Based on this, we posit:

H1: Incremental (vs. entity) theorists will prefer the experience (vs. credence) over credence (vs. experience) attributes in decision-making.

Next, it has been known for some time in mainstream consumer behaviour literature that when consumers are making a favourable decision, it could be driven by the salience of critical attributes. For example, early work argues that in everyday life, consumers pay attention to salient characteristics for decision-making (Taylor & Fiske, 1978). The salience process has been attributed to cognitive mechanisms like comprehension and understanding (Smith & Miller, 1979). Extant research shows that salient and relevant attributes are also considered important for decision-making (Van Ittersum et al., 2007).

Keeping in line with these earlier findings, recent research supports the role of attribute importance in product evaluation. For example, when consumers pay attention to a specific type of attribute (e.g., experiential feature), products with experiential qualities are evaluated more favourably (Brakus, Schmitt, & Zhang, 2014). Further, individual difference variables such as ethnicity or background may motivate consumers to pay attention to a specific attribute during product/service choice (Muhammad, 2008). Therefore, in the context of our current work, we advocate that a specific belief system (e.g., entity vs. incremental) would motivate consumers to pay attention to those attribute types that are perceived relevant for consumer decision-making. Extant research recommends that when specific attributes become relevant based on personal values and desires (e.g., in our case lay belief), these attributes are deemed necessary in decision-making (Van Ittersum et al., 2007). Based on this, we propose:

H2: Incremental theorists will consider experience (vs. credence) attributes as more important, which in turn will have a positive influence on their decision-making. The converse will hold for entity theorists.

Anchored in our review of the temporal orientation literature, we next reason that the way prospective consumers react to an initial experience with product/service attributes may be contingent on their temporal orientation. Put differently, we further advocate that the preference for the SEC attributes as positioned in H1 could be conditional on a person's temporal orientation. Based on previous literature, present-time orientation is not conducive to long-term motivation. Present-time orientation focuses on the 'here and now' and entails an active attitude towards what the moment spontaneously brings (Jochemczyk et al., 2017). This time orientation further encourages short-term focus, even at the cost of making long-term decisions (Lasane & Jones, 1999). Past research has also shown that entity (vs. incremental) theorists are more likely to demonstrate lower persistence while facing challenging tasks and engaging with long-term goals like weight management (Burnette, 2010; Dweck, 2000). A present orientation which entails a short-term focus and spontaneous outlook should, therefore, be more compatible with entity belief.

In contrast, future orientation has several beneficial effects on long-term motivation, which include conscientious decisions, higher engagement with tasks and mitigating potential risks of failure (Lasane & Jones, 1999; Simons et al., 2004; Horstmanshof & Zimitat, 2007). Individuals who are future-oriented exhibit more self-control, demonstrate conscientiousness, resist immediate gratification and work towards long-term goals (Joireman et al., 2008). Past research shows that focusing on the future benefits of a current action (e.g., academic pursuit) motivates people to engage with long-term career objectives (Simons et al., 2004).

We had previously discussed that lay belief is not a fixed concept, and people's adaptive mindset or a specific environment can encourage productive behaviour (Yeager &

Dweck, 2012; Murphy & Dweck, 2010). Past research shows that entity theorists may even be discouraged by supportive interventions, although these strategies are compatible with their mindset (Rattan et al., 2012). We suggest future orientation is a suitable intervention for entity theorists to encourage more effortful behaviour. This is based on our previous discussion that future orientation helps to work towards long-term goals. As a result, under future-time orientation, entity theorists can be motivated to take up more challenging tasks (i.e., prefer experience over credence attributes).

In contrast, incremental theorists demonstrate more adaptive strategies in the face of adversity and challenging tasks (Burnette, 2010). For example, incremental theorists exhibited persistence in goal pursuit, even in the face of likely failure (e.g., dietary setbacks). This is because incremental (vs. entity) theorists differ in success expectations when challenges arise (Burnette, 2010). A present-time orientation with its focus on immediate gratification could be distracting, and based on their persistent nature, incremental theorists should be able to resist any deviation from their goal pursuit. A future orientation, on the other hand, encourages higher motivation (e.g., conscientious decisions for a better future) and is more likely to support incremental theorists' pursuit of personal development goals. Incremental theorists would, therefore, exhibit a higher relative preference for experience (over credence) attributes, irrespective of their time orientation. This leads to:

H3: Under present orientation, incremental (vs. entity) theorists will prefer the experience (vs. credence) over credence (vs. experience) attributes. Under future orientation, incremental theorists will hold onto their preference, while entity theorists will demonstrate a preference reversal (i.e., prefer experience over credence attributes).

Figure 1 represents the conceptual framework, and the hypotheses studied.

<Insert Figure 1 about here>

To test the above model, we now report the findings from a single pre-test and three experiments that provide empirical evidence to the above hypotheses.

3. Pre-test

Given our focus on experience and credence attributes in this study, we situated our empirical analysis in the context of higher education. We chose a university as our product/service category based on several reasons. First, Chocarro, Cortinas & Villanueva (2018) argued that experience and credence attributes could significantly influence the choice of a prospective university. Similarly, Hsieh et al. (2005) has noted that a university is more likely to be characterised by experiential and credence attributes. Past research supports theory testing using product/service that are more likely to have relevant features of interest (Alford & Sherrell, 1996). Second, scholars have recommended more research on consumer decision models engaging university as a product/service category (Rauschnabel et al., 2016; Hemsley-Brown & Oplatka 2016). Third, choosing a university as our product/service category of interest is a rational option as it is familiar and relevant to our study subjects (i.e., students and prospective universities). Previous research has recommended engaging a student sample, especially if the product/service category is relevant and widely consumed by this demographic group (Atkinson & Rosenthal, 2014). Finally, a consistent product/service category across all our studies also allows us to control for any between-categories effects that may arise from engaging multiple products to test our theory (Hutchinson, Kamakura & Lynch, 2000).

A pre-test was conducted to identify attributes that were perceived by university students as SEC to address a common criticism in the SEC literature that the search, experience and credence constructs ought to be developed based on the perceptions of consumers rather than the assumptions of researchers (Ford et al., 1988; Tulay & Dion, 2009). Several attributes were chosen as potential SEC candidates from a random sample of

key educational marketing materials (i.e., college brochures targeted to prospective students). Examples of attributes identified include accreditation logo, rigorous coursework, outstanding teaching performance and research ethos amongst others.

A total of 55 students (average age = 21.04 years, Male = 61.8%) who did not participate in the main experiment took part in the pre-test. Students were asked to classify each attribute as either search, experience or credence after reading a definition of the SEC attributes. We selected attributes where 80% or more of the participants had classified them into a specific category (Roy & Naidoo, 2017). Based on the pre-test, 'logo', 'ranking' and 'well-known in the national market' were perceived as search attributes. Similarly, respondents perceived 'benchmarking against international best practices', 'continuous strategic review and self-improvement to enhance performance' and 'high teaching and learning outcomes' as experience attributes. Finally, 'leading-edge programs that connect to real-world', 'prepares students for challenging and global business environment', and 'notable alumni' were classified as credence attributes. Based on these classifications, two different descriptions of a fictitious *Capital University* were created to manipulate experience vs. credence attributes. Similar to past studies (Yang & Mai, 2010; Hsieh et al., 2005), search attributes were held constant across both experience and credence manipulations. The descriptions can be found in Appendix 2.

4. Experiment 1

4.1 Design

A one-way between subjects' laboratory experiment was conducted in which attribute type (i.e., experience vs. credence) was manipulated. 109 students (average age = 22.65 years, Male = 49.5 %) from a large Pacific Coast university were randomly allocated to the experimental conditions.

4.2 Procedure

The study was conducted in two seemingly unrelated parts. Following Park & John (2010), students were briefed that the first part of the study was about understanding human personality. Participants' lay belief was measured in the first part using the Implicit Person's Theory measure (Levy, Stoessner & Dweck, 1998; Park & John, 2010). Following this, participants were asked to take part in an independent study regarding the evaluation of a prospective university. Based on our pre-test, participants read the two different descriptions of *Capital University* described either in terms of experiential or credence features (see Appendix 2), while search attributes were controlled for.

With university choices known to be influenced by a range of attributes such as tuition, ranking, teaching quality, amongst others (Kern & Kelppe, 2000; Wilkins, Balakrishnan, & Huisman, 2011), our scenarios needed to reflect a range of attributes relevant for decision-making, while focusing on our key constructs; i.e., experience and credence attributes. Hence, we decided to provide information about search attributes, across all our scenarios, while manipulating variables that are of significant theoretical interest to this study. Extant research supports the manipulation of SEC attributes that are of theoretical interest to a particular study (Alford & Sherrell, 1996; Roy & Naidoo, 2017). Following this procedure, participants completed the key-dependent variables for the study 'attitude towards the university' and 'behavioural intention', followed by demographic variables.

4.3 Measures

Following the literature (Levy et al., 1998), lay belief was measured with eight items, four each to capture entity and incremental belief. A sample item for entity included "Everyone is a certain kind of person, and there is not much that they can do to really change that". Similarly, a sample item for incremental belief included "Everyone, no matter who they are, can significantly change their basic characteristics". All the items were measured on a seven-

point Likert scale (1 = strongly disagree, and 7 = strongly agree). Further, the items for entity belief were reverse coded. Responses for all eight items were averaged to form a scale (Cronbach alpha of 0.97), with higher scores indicating a belief in incremental theory.

Attitude and behavioural intentions as our key dependent variables were adapted from existing literature (Roy & Naidoo, 2017). Attitude was measured with seven items. These items are “I think this university is prestigious”, “I feel that this university is trustworthy”, “I think this university is reputable”, “I am favourable towards this university”, “This university provides a good quality education”, “This university is interesting” and “This university is valuable for my career”; all measured with a seven-point Likert scale (1 = strongly disagree and 7 = strongly agree). Intention was measured with three items – “I would probably be influenced towards going to this university”, “I will probably consider this university for my studies”, “I am keen to learn about the programs offered by this university” – all measured on a seven-point Likert scale. Both dependent variables showed high internal consistency (Cronbach alphas of 0.96 and 0.90, respectively).

4.4 Analysis and results

We analysed the data using the procedure outlined in PROCESS Model 1 (Hayes, 2013). In our analyses, we mean-centred lay belief so that ‘lay belief = 0’, now has a meaning (i.e., those with average lay belief; note that lay belief ranges from 1 to 7, so there is no 0 in the scale itself). Further, we used lay belief as the independent variable and feature type (1= credence) as the moderator. We repeated the analyses for our key dependent variables; attitude and intention. The findings for attitude are reported in Table 1.

<Insert Table 1 about here>

4.4.1 Attitude

From the top part of Table 1, the two-way interaction between lay belief and attribute type is significant and shows a negative interaction ($\beta = -1.67, t = -38.76, p = 0.00$) for attitude.

Table 1 further illustrates the conditional effect of feature type at low (1 SD below mean) and high levels of lay belief (1 SD above mean). Recall, that lower (vs. higher) scores on the lay belief scale indicated entity (vs. incremental) beliefs (Levy et al., 1998). At 1 SD below mean (i.e. entity theorists), showcasing the university with credence (vs. experience) attributes enhances their attitude ($\beta = 3.58, t = 30.0, p = 0.00$). At 1 SD above mean (i.e. incremental theorists), experience attributes have a higher impact on attitude compared to credence attributes ($\beta = -3.49, t = -27.23, p = 0.00$).

4.4.2 Intention

The findings for intention exactly mirror the findings for attitude (see Table 2). Once again, the two-way interaction between lay belief and feature type is significant ($\beta = -1.58, t = -26.46, p = 0.00$). For entity theorists (1 SD below mean), credence attributes increased purchase intention ($\beta = 3.59, t = 21.64, p = 0.00$), while for incremental theorists, experience attributes enhanced purchase intention ($\beta = -3.13, t = -17.51, p = 0.00$). We deem these findings to support H1.

<Insert Table 2 about here>

4.5 Discussion

Based on the above analyses, we find support for H1. Our observed findings specifically show that consumers who hold incremental (vs. entity) belief preferred experience (vs. credence) over credence (vs. experience) attributes in decision-making. The findings hold for both our dependent variables: attitude and intention. These findings are based on measured lay belief, while we manipulated the attribute type. However, past research has shown that lay belief can also be manipulated through exposure to information advocating for a

particular theory (Chiu, Hong, & Dweck, 1997; Yorkston et al., 2010). In our second study, lay belief was, therefore, manipulated, rather than measured. Further, in our second study, we also provide empirical support for our mediation hypothesis, H2.

5. Experiment 2

5.1 Design

A 2 (lay belief: incremental vs. entity) x 2 (attribute type: experience vs. credence) between subjects' experiment was conducted. 300 university students (average age = 22.47 years, Male = 49.7 %) participated in the between-subjects' experiment. The researchers attended three highly reputable higher education recruitment fairs held in the Asia Pacific region. Participants who attended these fairs were approached by the researchers and asked to participate in this study. The experiment was, therefore, conducted in an actual consumption environment and more realistic compared to our previous laboratory experiment (Morales, Amir & Lee, 2017).

5.2 Procedure

The experiment was conducted in two seemingly unrelated parts. For the first part, subjects were briefed that they were taking part in a study on human character. Following this, they read an article about the nature of human character. We manipulated lay belief by asking respondents to read an essay about human character (Park & John, 2010). Incremental (vs. entity) participants read that human character was malleable (vs. rigid) according to a scientific report. Two manipulation check questions followed this manipulation. In the next part, subjects were then asked to participate in an independent study regarding the evaluation of a prospective university. Participants further read the two different descriptions of *Capital University* from our first study. After this, participants completed the key-dependent variables for the study: attitude towards the university and behavioural intention.

5.3 Measures

The second study used the same items from study 1 for both the key-dependent variables attitude and purchase intention. Both dependent variables showed high internal consistency (Cronbach alphas of 0.97 and 0.94). Two items were used as manipulation checks for implicit belief. After reading the implicit belief article, participants responded to the questions “A person’s character is ingrained and can’t really be changed” and “A person’s character is malleable and can be changed” both measured on a seven-point Likert scale (with 1 = strongly disagree, and 7 = strongly agree).

To test our mediation hypotheses, we measured attribute importance with four items; “The attributes used to describe Capital University are salient to me”, “The attributes used to describe Capital University are important to me”, “ I consider the attributes of Capital University to be very attractive” and finally “The attributes used to describe this university weighed heavily in my decision-making”; all measured on a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree). The scale showed good reliability (Cronbach alpha = 0.87).

5.4 Analysis and results

5.4.1 Manipulation check

The manipulation for lay belief was successful with results showing that entity theorists perceived human character to be more rigid (Ms of 6.05 vs. 2.0, $F(1,298) = 1803.8$, $p < 0.001$); while incremental theorists perceived human character to be malleable (Ms of 5.91 vs. 2.0, $F(1,298) = 1716.7$, $p < 0.001$). A two-way ANOVA further showed a significant interaction between lay belief and attribute type for both attitude ($F(1,296) = 7938.24$, $p < 0.001$) and intention ($F(1,296) = 5007.25$, $p < 0.001$).

5.4.2 Attitude

In line with our hypothesis, results of planned contrast analyses showed that incremental theorists found *Capital University* as more attractive when it was described in terms of experience vs. credence attribute (Ms of 5.95 vs. 2.02; $t(296) = 67.07, p < 0.001$). The opposite was found for entity theorists who considered the university as more attractive in the credence vs. experiential condition (Ms of 5.92 vs. 2.47; $t(296) = -58.93, p < 0.001$).

5.4.3 Intention

Similar results were obtained for intention where planned contrast analyses showed that incremental theorists preferred experience over credence attributes (Ms of 5.93 vs. 2.01; $t(296) = 52.53, p < 0.001$) and the converse held for entity theorists (Ms of 6.01 vs. 2.45; $t(296) = -47.54, p < 0.001$). The means for attitude and intention are reported in Table 3.

<Insert Table 3 about here>

5.4.4 Moderated mediation

To test for mediation, we analysed the data with Hayes (2013) Model 7 with 5000 bootstrap analysis. [The moderated mediation model is represented in Figure 1 \(H2\)](#). Our observed findings showed that the two-way interaction between lay belief and attribute type had a significant effect on the mediator ‘attribute importance’ ($\beta = 5.25, t = 43.14, p = 0.00$), while the mediator had a further positive influence on the dependent variable ‘attitude’ ($\beta = 1.21, t = 38.44, p = 0.00$). The conditional indirect effect of attribute type on attitude through the mediator revealed further insights. Amongst incremental theorists, this indirect effect was negative (conditional indirect effect = -2.93, 95% confidence interval does not straddle zero), while this was positive for entity theorists (conditional indirect effect = 3.44, 95% confidence interval does not straddle zero). Based on the findings, it appears that incremental theorists considered experience (vs. credence attributes) as more important for their attitude, while the converse held for entity theorists.

A similar pattern of results was replicated for intention, with the two-way interaction having a significant influence on the mediator ($\beta = 5.24, t = 43.14, p = 0.00$), and the mediator further influencing the dependent variable ‘intention’ ($\beta = 1.24, t = 38.32, p = 0.00$). The indirect effect through attribute importance once again supported a positive influence of credence (vs. experience) attribute on intention for entity people (conditional indirect effect = 3.52, 95% confidence interval does not straddle zero), and a negative influence for incremental people (conditional indirect effect = -3.00, 95% confidence interval does not straddle zero). Incremental theorists found the experience (vs. credence) attributes as more important for purchase intention, while the converse was true for entity theorists. These observed findings support H2.

5.5 Discussion

In the second experiment, we tried to achieve support for both H1 and H2. However, in this instance, lay belief was manipulated rather than measured. The findings from the two-way between subjects’ experiment confirm the findings for study 1 and provide robust support for our first two hypotheses. When lay belief was manipulated, we once again found that incremental (vs. entity) theorists preferred the university in terms of both attitude and intention when it showcased experience (vs. credence) over credence (vs. experience) attributes. Further, when a particular lay belief focused on a specific attribute type (e.g., incremental on experience vs. credence), the importance of these attributes was higher, and these in turn positively influenced attitude and intention. Our third experiment was designed to further test a boundary condition for the attribute x lay belief interaction, or in other words, examine H3.

6. Experiment 3

6.1 Design

A 2 (time orientation: future vs. present) x 2 (lay belief: incremental vs. entity) x 2 (attribute type: experience vs. credence) between subjects' experiment was conducted for the third study. A total of 600 university students (average age = 22.67 years, M = 51.8 %) took part in this experiment.

6.2 Control variables

The literature on lay theory has argued that incremental vs. entity beliefs can lead to the pursuit of mastery and performance goals (Murphy & Dweck, 2010). In the academic context, evidence shows that both performance and mastery goals are valued by students (Darnon et al., 2009). Similarly, future-time orientation has been linked to the construct of efficacy (Lasane & Jones, 1999), and past research shows that academic self-efficacy was a significant predictor of academic motivation and performance (Chemers, Hu & Garcia, 2001). The third study, therefore, controlled for type of goals and academic self-efficacy to rule out potential confounds regarding the findings.

6.3 Procedure

Similar to study 2, the third experiment was once again conducted in a real consumption setting. Prospective students who attended higher education recruitment fairs held in the Asia-Pacific region were recruited to participate in this study. The study took part in seemingly three unrelated parts. In the first study, subjects were told that they were participating in a study about how people perceive time. The time orientation manipulation was introduced in this part. Following existing literature (Bal & van den Bos, 2012), the manipulation for time orientation involved participants reading descriptions about future and present-time orientations, followed by them coming up with an appropriate example. For example, under future-time orientation participants were informed that this orientation involved working towards the future, making steady progress, meeting deadlines and engaging in challenging tasks to move forward. An example of this was someone staying

back to study for an upcoming test, rather than going to a party. Following this description and example, participants were requested to come up with their own examples. The manipulation was then followed by manipulation check questions.

In the second part, subjects were told that they were taking part in a study related to human character. The lay belief manipulation was introduced in this part, with manipulation check items. The same stimulus for lay belief from study 2 was used for this purpose. Finally, in the third part, students completed the university choice study, using the same *Capital University* scenario from studies 1 and 2 (i.e., where experience and credence features were manipulated and search features were controlled).

6.4 Measures

The third study used two manipulation checks for time orientation (i.e., “I like to plan and work now for a better future” and “I like to play and enjoy life’s rewards right now”); measured on a seven-point scale (1= strongly disagree and 7 = strongly agree). The manipulation for lay belief and attribute type replicated the process from study 1. The same dependent (i.e., attitude, intention) and mediator (i.e., attribute importance) variables were used for the second study and engaged the same items from the previous studies. All the measures showed good reliability (attitude Cronbach alpha = 0.95; intention Cronbach alpha = 0.89 and attribute importance Cronbach alpha = 0.89). As discussed above, under section 6.2, we also measured mastery and performance goals with three items each. Sample items for performance goal are “While choosing a university, it is important to get good grades”, while for mastery goals a sample item includes “While choosing a university, it is important to learn as much as possible”. Both these scales demonstrated good reliability (Cronbach alpha = 0.81 and 0.83). Finally, academic self-efficacy was measured with 11 items (Chemers, Hu & Garcia, 2001), with respondents answering to “Please rate how confident you are in performing the following academic tasks” followed by “participate in class

discussions”, “keep up to date with your schoolwork”, etc. This scale showed good reliability as well (Cronbach alpha = 0.80).

6.5 Analysis and results

6.5.1 Manipulation check

Firstly, the manipulation for both time orientation and lay belief worked. The findings of a one-way ANOVA showed that people with a future orientation were willing to work towards a better future in comparison to their counterparts (Ms of 5.89 vs. 2.07; $F(1,599) = 3374.43$, $p < 0.001$); while people with a present-time orientation were willing to enjoy life now (Ms of 6.0 vs. 2.0; $F(1,599) = 3734.04$, $p < 0.001$). Similarly, people with an entity belief believed human character to be more rigid (Ms of 5.4 vs. 2.0; $F(1,599) = 1794$, $p < 0.001$), while incremental belief reported human character as malleable (Ms of 5.5 vs. 2.04; $F(1,599) = 1866.16$, $p < 0.001$). Based on the findings, we deemed the manipulations successful.

6.5.2 Attitude

ANOVA results showed a significant three way-interaction between time orientation, lay belief and attribute type ($F(1,592) = 2000.93$, $p < 0.001$) for the dependent variable attitude. The analysis was re-run with the covariates. The three-way interaction remained significant in the presence of covariates as well. The main effects of the covariates were non-significant and hence dropped from further analyses. Results of contrast analyses supported our hypothesis. Under present-time orientation, incremental theorists preferred experience over credence (Ms of 4.96 vs. 2.51; $t(592) = 41.04$, $p < 0.001$), while entity people preferred credence over experience (Ms of 5.97 vs. 2.51; $t(592) = -58.09$, $p < 0.001$). Under future orientation, incremental subjects held onto this preference (Ms of 5.98 vs. 2.44; $t(592) = 59.44$, $p < 0.001$), while entity theorists demonstrated a preference reversal to favour experience over credence attributes (Ms of 5.51 vs. 2.55; $t(592) = 49.76$, $p < 0.001$).

6.5.3 Intention

The findings with intention mirrored the results for attitude. The influence of covariates was non-significant. Once again, under present orientation, the preference for experience vs. credence held for incremental (Ms of 5.04 vs. 2.55; $t(592) = 28.34, p < 0.001$) while the converse was true for entity (Ms of 5.96 vs. 2.50; $t(592) = -39.41, p < 0.001$). Similarly, under future orientation, incremental still preferred experience vs. credence (Ms of 5.99 vs. 2.56; $t(592) = 39.03, p < 0.001$) while their counterparts demonstrated a preference reversal (Ms of 5.55 vs. 2.53; $t(592) = 34.33, p < 0.001$) only to prefer the experience over credence attributes. The findings from study 3, therefore, support our third hypothesis H3. The means for both attitude and intention are displayed in Tables 4 and 5. The three-way interaction for intention is plotted in Figures 2 and 3.

<Insert Figures 2 and 3 about here>

<Insert Tables 4 and 5 about here>

6.5.4 Moderated mediation

We analysed the data separately for future and present orientation by using Hayes Model 7 with the same dependent (attitude and intention) and mediator (attribute importance) variables. For present-time orientation and attitude, the indirect impact of credence (vs. experience) was negative for incremental (conditional indirect effect = -2.33, 95% confidence interval does not straddle zero), but positive for entity subjects (conditional indirect effect = 3.1, 95% confidence interval does not straddle zero). With incremental subjects, a similar negative mediating effect was obtained for intention, (conditional indirect effect = -2.33, 95% confidence interval does not straddle zero) as well as a positive effect observed for entity (conditional indirect effect = 3.09, 95% confidence interval does not straddle zero).

The results turned out to be interesting under future orientation. Credence (vs. experience) attributes reduced attitude for both incremental (conditional indirect effect = -.42,

95% confidence interval does not straddle zero) and entity belief (conditional indirect effect = -0.37, 95% confidence interval does not straddle zero); thereby explaining the preference reversal for entity people. For future orientation, the indirect impact of attribute type on intention through the mediator was not significant for both entity and incremental (confidence interval straddles zero for both cases).

7. Overall discussion

The fundamental premise of this study is that consumers with different implicit beliefs will prefer a product/service which is showcased in terms of different attributes (e.g., experience and credence). This was hypothesised based on the literature of SEC and implicit theories. It was further hypothesised that the specific preference of implicit belief for an attribute type would lead to the greater importance of these attributes as a factor in decision-making. As a result, this will lead to higher attitude and intention, while consumers are trying to decide on a product/service for consumption. Finally, based on the time orientation literature, it was also argued that the preference for incremental theorists remained stable under both future and present-time orientation. In contrast, entity theorists would show a preference reversal under the influence of future-time orientation.

The observed results of a single pre-test and three experiments confirmed our hypotheses. First, based on a pre-test, several attributes were classified as experience and credence, which were then used to create two different descriptions of a fictitious *Capital University*. We controlled for search attributes across these descriptions. In our first experiment, students' implicit belief was measured, following which they were asked to decide between two versions of *Capital University* described in terms of experience vs. credence attributes. Our findings show that subjects with incremental (vs. entity) beliefs preferred the university with experience (vs. credence) over credence (vs. experience) attributes. Our second study manipulated lay belief while conducting a study in the field.

Moreover, the second study also used a mediator, ‘attribute importance’, to understand the underlying mechanism leading to decision-making. The findings from the second study not only replicated the findings from study 1 but also supported our moderated mediation hypothesis. We observed that incremental subjects found experience (vs. credence) attributes to be more important in decision-making, while the converse was true for their entity counterparts. This study was then followed by a third study conducted in the field.

The findings from the third study showed that the differential preference for incremental (vs. entity) held under present-time orientation. In contrast, entity subjects exhibited a preference reversal under future orientation, such that in this instance, they preferred experience over credence attributes. However, incremental theorists held onto their preference under future orientation. Results of separate moderated mediation analyses showed that under present orientation, attribute importance was enhanced during decision-making when entity subjects were exposed to the university with credence (vs. experience) attributes. This effect was reversed under present orientation for their incremental counterparts. Interestingly, under future orientation, credence attributes lowered attitude for both incremental and entity theorists. However, the indirect effect of attribute type on intention through the mediator was not significant for people with either lay beliefs. Based on the results from multiple studies, the findings are robust.

7.1. Contributions and implications

Our findings make **original** contributions to the literature. We contribute to lay theory, thereby addressing the call for more research in this area (Anisman-Razin & Levontin, 2020; Wheeler & Omair, 2016; Kwon & Nyakanpukkam, 2015; Park & John, 2010). Our work extends implicit theory in this regard by providing empirical support that lay belief can differentially influence the preference for SEC attributes in decision-making. The findings that consumers with entity and incremental beliefs, respectively, prefer credence and

experience attributes in product/service choice decisions are [original](#) contributions of the current work. The findings also contribute to extant literature that shows that credence attributes possess signalling capabilities that can guide consumer decisions, albeit when mechanisms such as certifications (e.g., eco-labels) are engaged (Atkinson & Rosenthal, 2014; Balineau & Dufeu, 2010). In addition to labels such as eco-certifications, our work shows that an individual's lay theory can guide preference for credence attributes in a product/service. By focusing on credence attributes, the current work also helps to understand decision-making for attributes that cannot be verified by consumers even after consumption. Extant researchers (Roy & Naidoo, 2017; Mortimer & Pressey, 2013) currently call for more work in this area.

The role of time orientation as an important psychological variable influencing consumer behaviour is well established in the literature (Legohérél et al., 2009; Hornik & Zakay, 1996). However, the motivational role that future-time perspective plays has received limited attention in the literature (Simons et al., 2004). Further, a limited body of research (Yeager & Dweck, 2012; Rattan et al., 2012) has shown that entity theorists' motivation can be undermined by providing them with conducive strategies (e.g., easy academic tasks). Our findings contribute to this literature by showing that future-time orientation has a motivating influence on entity subjects. Consequently, under future orientation, an entity theorist is likely to consider more experience (vs. credence) attributes in product choice. Finally, by selecting university as its product/service category of interest, the current research also contributes to an area currently under-researched: the study of the underlying consumer decision-making process in the choice of higher education institutions (Rauschnabel et al., 2016; Hemsley-Brown & Oplatka 2016).

7.1.1 Managerial implications

The findings have implications for managers as well. Our findings should apply to a range of product/service categories that are defined by experience and credence attributes. First, managers should understand that attributes engaged in promotional activities may have differential implications for consumer decision-making. Some attributes, such as the taste of food or quality of teaching, must be experienced, and managers can invite consumers (e.g., those with incremental beliefs) to experience these attributes (e.g., sampling for taste or experience a classroom for a day). For example, at the university of one of the authors, there is currently a marketing program called ‘test drive’ where post-graduate students can experience the university before applying.

Furthermore, the type of belief a person holds can be probed while engaging with consumers (e.g., during product/service discussions such as at recruitment fairs for students). For example, students who are interested in a specific university can be administered a survey to measure their lay beliefs. This could be positioned as part of the effort to better understand students’ motivation to undertake university studies.

The consumer insights gained from this study are relevant for promotion, targeting and positioning strategies. Based on our findings, product advertisements can highlight experiential features, and further, encourage an incremental mindset (e.g., learn relevant skills in a high-quality academic environment, learn new automobile technology like self-parking, etc.). Alternatively, products/service can focus on credence attributes, like slogans, to highlight their brand proposition. For example, through a quick review of promotional materials of real-life universities, we find them engaging slogans like ‘Building tomorrow’s business leaders one-by-one’ or ‘Leadership for good starts here’. These statements have signalling qualities. Similarly, automobile brands like BMW engage slogans such as ‘ultimate

driving machine' to signal luxury and status. When suitably pitched to consumers with an entity mindset, these features can influence decision-making.

Finally, if consumers are unsure of their skills or perceive themselves to have fixed intelligence (i.e., entity), they can be encouraged by inducing a future focus to take up challenging tasks. A future focus can be incorporated into university promotional materials by highlighting how challenging subjects would benefit students with their long-term career (e.g., making use of brand communication such as 'future-ready'). Further, to allay any fears that students might have from possessing limited ability, universities can highlight mechanisms (e.g., one-to-one interaction, help with academic skills), that will help students to learn and engage better, should they decide to take up more challenging academic engagement. Similarly, if a potential buyer is reluctant to use a self-parking feature (e.g., specific market segments with limited ability to engage with the technology), the person can be motivated by stressing that technology like self-parking is increasingly going to drive future automobiles.

7.2. Limitations and future research

The current work is not without limitations. First, in our studies, we controlled for search attributes as these attributes are easy to confirm before decision-making. Previous work also argues that not all type of SEC attributes may be relevant for decision-making (Yang & Mai, 2010). Through this control procedure of search attributes, we then compared an attribute that needs to be experienced vs. one that cannot be verified even after consumption of the product/service (i.e., credence attributes). Future work may pitch search against experience or credence attributes to understand its role in decision-making. In terms of time orientation, we compared the role of present vs. future in consumer decision-making. Future work may consider past orientation; for example, when a past purchase of a product/service can influence future behaviour. Our study further considers a single product/service category to

test a theory. In our methodology section, we have justified the usage of this single product/service category based on extant literature (Alford & Sherrell, 1996; Roy & Naidoo, 2017). However, the current findings could be examined across different product or service categories to test their generalisability. Finally, as compared to our student sample, future studies may engage a broader consumer or even cross-cultural sample to see if the decision-making framework proposed in the current work still holds. Although our classification of SEC attributes is based on the pre-test, perceptions regarding these attributes may change depending on a cross-cultural sample.

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Table 1: Study 1 – Process results

Model: Attitude

	Coeff.	SE	t	p
Constant	3.59	0.06	63.37	0.00
Feature type (Credence = 1, Experience = 0)	0.30	0.08	3.59	0.00
Lay Belief	0.82	0.03	28.06	0.00
Lay belief x Feature type	-1.67	0.04	-38.76	0.00

Conditional effect of feature type at values of lay belief

Lay Belief	Effect	SE	t	p
1 SD Below Mean	3.58	0.12	30.0	0.00
Mean	2.54	0.10	24.91	0.00
1 SD Above Mean	-3.49	0.13	-27.23	0.00

Table 2: Study 1 – Process results

Model: Intention

	Coeff.	SE	t	p
Constant	3.51	0.08	44.57	0.00
Feature type (Credence = 1, Experience = 0)	0.47	0.12	4.11	0.00
Lay Belief	0.75	0.04	18.65	0.00
Lay belief x Feature type	-1.58	0.06	-26.46	0.00

Conditional effect of feature type at values of lay belief

Lay Belief	Effect	SE	t	p
1 SD Below Mean	3.59	0.16	21.64	0.00
Mean	2.61	0.14	18.37	0.00
1 SD Above Mean	-3.13	0.18	-17.51	0.00

Table 3: DV as a function of attribute and lay belief

Lay belief/attribute type	DV = Attitude		DV = Intention	
	Experience Attribute	Credence Attribute	Experience Attribute	Credence Attribute
Incremental	5.95 (0.32)	2.02 (0.35)	5.93 (0.46)	2.01 (0.38)
Entity	2.47 (0.40)	5.92 (0.35)	2.45 (0.53)	6.01 (0.45)

Figures in bracket denote standard deviation

Table 4: Study 3 – Attitude as a function of time orientation, lay belief and attribute type

	Present		Future	
	Experience Attribute	Credence Attribute	Experience Attribute	Credence Attribute
Incremental	4.96 (0.42)	2.51 (0.41)	5.98 (0.26)	2.44 (0.42)
Entity	2.51 (0.33)	5.97 (0.28)	5.51 (0.39)	2.55 (0.37)

Figures in bracket denote standard deviation

Table 5: Study 3 – Intention as a function of time orientation, lay belief and attribute type

	Present		Future	
	Experience Attribute	Credence Attribute	Experience Attribute	Credence Attribute
Incremental	5.04 (0.68)	2.55 (0.50)	5.99 (0.39)	2.56 (0.49)
Entity	2.50 (0.55)	5.96 (0.46)	5.55 (0.54)	2.53 (0.63)

Figures in bracket denote standard deviation

Figure 1: Theoretical framework

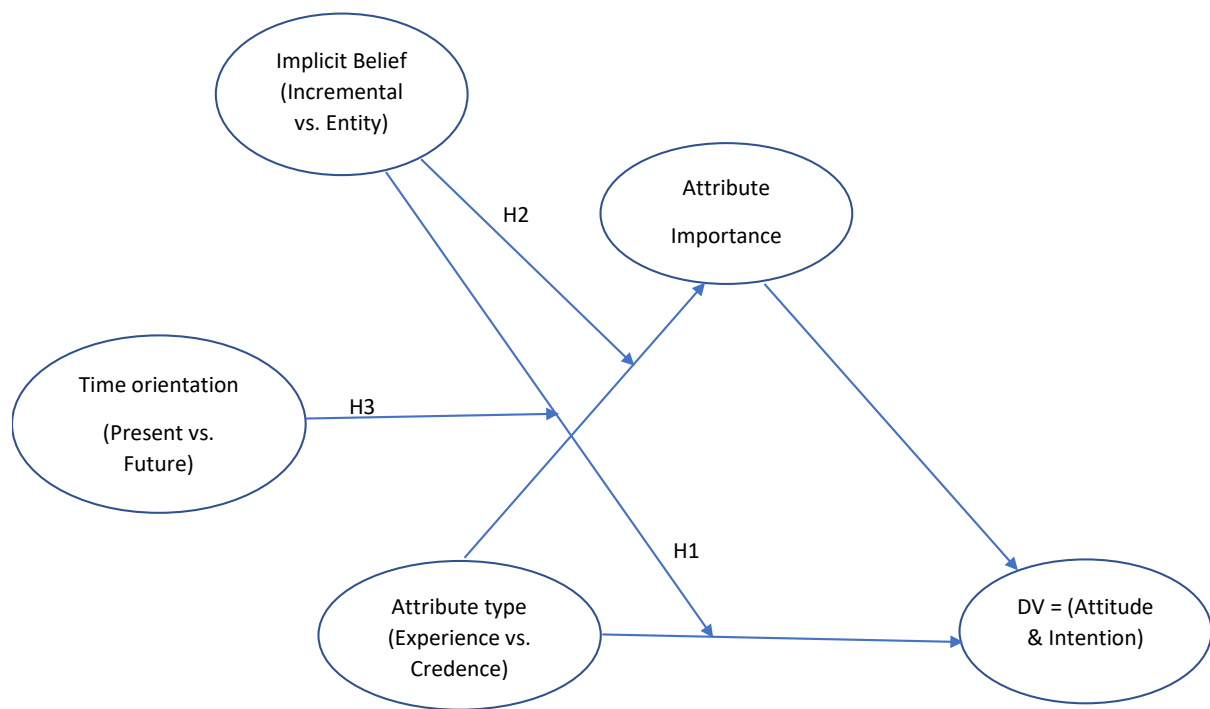


Figure 2: Attribute x lay belief interaction under present-time orientation

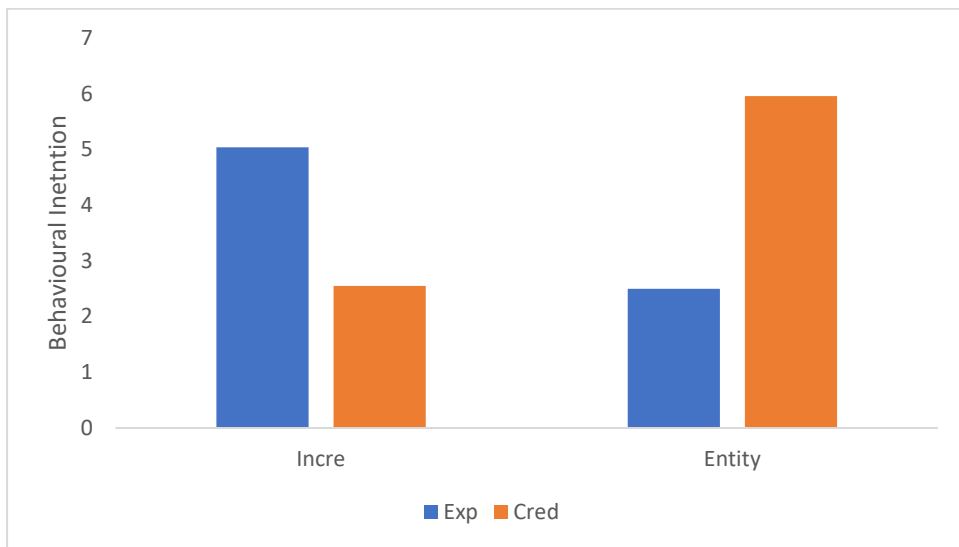
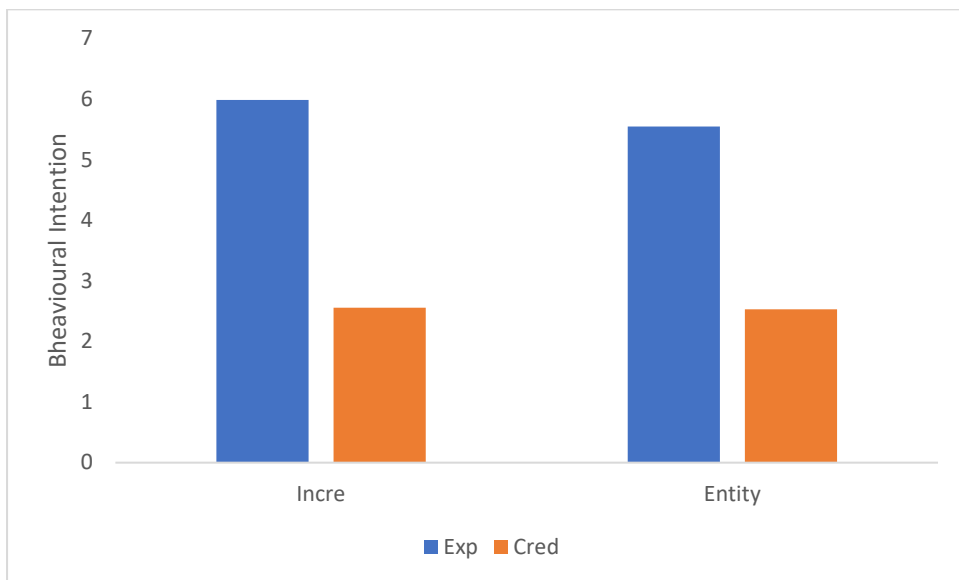


Figure 3: Attribute x lay belief interaction under future-time orientation



Appendix 1- Key differences between incremental and entity theorists

	Entity Theory	Incremental Theory
Disposition/Mindset	Fixed	Growth-oriented
Achievement goals	Performance goals	Learning/Mastery Goals
Behaviour	Helplessness	Mastery-orientation
Reaction to setbacks	Blame lack of ability (i.e., maladaptive behaviour)	Address lack of effort (adaptive behaviour)

Source: Based on Dweck 2000, 2006; Dweck, Chiu, & Hong 1995; Dweck & Leggett 1988; Hong, Chiu, Dweck, Lin, & Wan 1999

Appendix 2 – descriptions of fictitious *Capital University*

Capital University with experience attributes

You are in the process of selecting a university for your studies. You are browsing the internet for potential study destinations, and you come across this potential university called ‘*Capital University*’ with excellent infrastructure and located in an attractive city. You realise that the university website has displayed a prestigious accreditation logo, which labels it as one of the best institutions in the world. The university is also well known in the national market.

As part of its accreditation framework, *Capital University* undertakes continuous and strategic **self-review and improvement** to enhance its **academic performance**. It also benchmarks itself against **international best practices** to ensure **high teaching and learning outcomes** for its students.

Capital University with credence attributes

You are in the process of selecting a university for your studies. You are browsing the internet for potential study destinations, and you come across this potential university called ‘*Capital University*’ with excellent infrastructure and located in an attractive city. You realise that the university website has displayed a prestigious accreditation logo, which labels it as one of the best institutions in the world. The university is also well known in the national market.

As part of its accreditation framework, *Capital University* provides leading-edge courses and programs that **connect** to the **real world**. The university prepares its students for **challenging** and **changing global business** environment and boasts of **notable world leaders** as its alumni.