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Integrating positive financial attitudes to nurture students' identity as informed financial decision-makers in high power distance Chinese contexts

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Abstract
Research on financial literacy has focused on the influence of teachers and parents in financial literacy education, which mediates the impact on students' financial behaviour. Much less attention has been given to the influence of traditional Chinese hierarchical culture on a child's identity as a student. This paper applies Lee's (2017) theory of identity grafting to examine how student self-identity towards personal financial management is reflected in their financial behaviour, and whether nurturing students with positive financial attitudes can improve the financial behaviour of students who are challenged by power distance values. We surveyed 1164 students from 39 secondary schools. We first focus on the influence of power distance on students that endorse the traditional Chinese values that superiors and subordinates should know their place and behave accordingly. Second, we focus on how students' positive financial attitude interact with power distance effects. The results from structural equation modelling show that that high endorsement of power distance has a negative impact on financial behaviour in spending and that positive financial attitude has a positive influence on financial behaviour in spending, protection and planning. Further, students who highly endorse power distance values but have positive financial attitudes can still demonstrate positive financial behaviour. This paper is the first to validate identity grafting effects on students via statistical study. The implications of the findings on identity grafting are discussed.

Keywords Financial attitudes · Financial behaviour · Financial literacy education · Power distance · Traditional Chinese hierarchical culture

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Introduction

Traditional Chinese culture emphasises that individuals should know their place in the social hierarchy and that subordinates in the hierarchy are obligated to follow the instructions of their superiors (Schwartz 2006). Education researchers describe the manifestation of this culture in the form of the examination-oriented school system in contemporary Chinese school systems (Tsai et al. 2017) and relate this phenomenon to the study of power distance (Hallinger and Lu 2014; Cheng and Szeto 2016). Ning et al. (2016), Lee and Lee (2018) implements measures of power distance and shows that this culture has a negative relationship with teachers' focus on student learning. Power distance refers to the acceptance of inequality by subordinates in a hierarchical relationship (Hofstede 2001). Subtexts of power distance may also emerge in assumptions about how learning to manage personal finances ought to be acquired. Financial literacy is crucial for students to understand the importance of savings and planning for retirement, while avoiding high levels of debt that might result in bankruptcy, credit repayment defaults, and mortgage repayment. Traditional financial literacy education (FLE) holds parents and teachers responsible for fostering children's positive financial behaviour (FB) (Hanson and Olson 2018; Sari and Fatimah 2017). However, few studies seek to understand the identity effects in an education system that endorses power distant cultures. This paper seeks to fill this research gap using Lee's (2017) theory of identity grafting to understand the potential negative effects of power distance on student financial behaviour and to determine whether efforts to develop financial attitudes for an alternative set of learner identities can help foster more effective teaching and learning relationships in FLE.

Power distance

In China, the cultural importance of educational differentiation manifests in high parental expectations and strong examination orientation (Tsai et al. 2017: 67). Students are sorted by academic ability via examinations, and 'culturally specific priorities and investments in education' are evident where social distinction is endorsed over social inclusion (Tsai et al. 2017: 68). This reality replicates in societies beyond mainland China where ethnic Chinese prevails as the dominant majority. In Chinese hierarchical societies, social inequality not only exists but is endorsed as a just and right benchmark for deciding how resources should be distributed (Lee and Lee 2018).

The concept of power distance is useful for understanding hierarchical culture in Chinese school systems. Power distance is defined as the extent to which less powerful members of organisations and institutions accept and expect that power is unequally distributed (Hofstede 2001). Power distance is reflected in Chinese family traditions: seniors transmit wisdom and expertise to younger people, who will in turn accord seniors with the respect by demonstrating obeisance in acknowledgment of the seniors' superiority (Fu et al. 2018). Also embedded in Chinese hierarchical contexts is the belief that children are to obey parents, especially among those who are socialised into and endorse the cultural value of power distance (Monea et al. 2016).

This concept may be highly relevant for developing how learning can be enhanced for students who struggle with financial literacy education because of their strong endorsement of hierarchical learning cultures. As Huhmann and McQuitty (2009) assert, individuals who more highly value power distance are more likely to follow the advice of financial literacy experts. This has important implications for FLE in Chinese school systems. However, there is limited research available from which to draw these implications, so we extend the literature review to examine the effects of power distance on academic subject learning, which has a more established set of research-based findings.

Mixed results surface in studies on whether Chinese pedagogical traditions are effective. Watkins and Biggs (1996, 2001) studies on Chinese learners show that traditional Confucian pedagogy is instrumental to the outstanding performance of Chinese students in international performance ranking exercises (e.g., OECD 2015). However, these assertions contradict pedagogical theories from Western contexts. For example, evidence suggests that students learn better in large teacher-centred classrooms where memorisation is encouraged (Watkins and Biggs 1996, 2001) than in student-centred learning as promoted by certain Western education scholars (DuFour et al. 2010). Evidence has emerged that Confucian pedagogical traditions are effective for Chinese learners, although they have a poorer understanding of scientific concepts than their Western counterparts (Lau et al. 2015). Research demonstrates that ethnic Chinese teachers' possession of power distance identity is negatively related to their commitment to student-centred learning (Ning et al. 2016). However, this negative influence can be overcome when these teachers are supported by appropriate forms of professional development (Lee and Lee 2018). However, studies are needed to ascertain whether this is also the case for students.

Based on the above literature, we notice that the possession of power distance values promote student openness to learning from financial literary experts, but results are mixed when the study of its effects are extended to the learning of other subject domains. Therefore, a deeper investigation is needed in the domain of financial literacy learning. We argue that students' values regarding power distance are the result of family socialisation and that the negative influence of power distance can be overcome with the complementary nurturing of the appropriate financial attitudes among students. This paper examines how students' self-identity towards personal financial management is reflected in their financial behaviour and whether nurturing positive financial attitudes among students who have low power distance values can improve their financial behaviour.

Financial literacy

Financial literacy is the ability to understand financial knowledge, acquire appropriate financial attitudes, and apply this ability to make financially responsible decisions to achievement financial wellbeing (e.g. via savings, retirement planning, critical and calculated risk-taking) (OECD 2018). As financial literacy is demonstrated by the achievement of financial wellbeing in real contexts, this ability is highly dependent on and varied according to the sociocultural and education context in which the

learner is situated (Ho and Lee 2020; Lusardi and Mitchell 2014). is demonstrated by the ability to apply financial knowledge (FK) to execute financial behaviour (FB) (e.g., wellbeing in managing money and transaction) (Vitt et al. 2000). This ability is also underpinned by the possession of appropriate financial attitude (FA) and other "soft" competencies (e.g., cultural identity and values) that indirectly influence FB (Ibrahim and Alqaydi 2013; OECD 2014; Lusardi and Mitchell 2014; Vitt et al. 2000; Ibrahim and Alqaydi 2013; Hogarth 2002; Mandell 2006). As the literature prevails in the association of financial literacy with FA, we focus on this attribute alongside the study of the more overlooked "soft" attributes such as power distance.

Financial attitude

Financial attitude (FA) refers to how an individual feel about personal financial management, which plays a crucial role in the individual's ability to understand, analyse and manage personal financial matters (Edwards et al. 2007; Vitt et al. 2000). In a study of 265 high school students in the US, Beutler and Gudmunson (2012) elaborate that FA involves feelings of entitlement and conscientiousness, and both attitudes are needed for students to demonstrate good financial behaviour. Entitlement refers to a student's attitude towards whether s/he has the right to manage personal finances autonomously. Conscientiousness refers to a student's attitude towards whether s/he has the responsibility to heed advice from authoritative persons on personal finance management.

We performed a literature review, and the evidence supports the argument that the possession of both conscientiousness and entitlement attributes are necessary to demonstrate the appropriate financial behaviour. Studies indicate that parental involvement has a positive influence on students' financial attitudes, especially in acquiring attitudes towards money management (Borden et al. 2008; Calderón-Tena et al. 2011; Sabri et al. 2010; Sohn et al. 2012). Research shows that nurturing and supportive parents promote the development of the child's conscientiousness towards self-regulation, which is an essential attitude for effective financial planning (Baker and Hoerger 2012). However, the same study also shows that students experience challenges in demonstrating the appropriate financial behaviour with parental overcontrol, which results in feelings of a lack of sense of entitlement in money management. On the one hand, research on Chinese students shows that students who pay too much obeisance to parents are less financially literate and less capable of managing their cash flow compared to their more autonomous peers who may acquire financial knowledge as they earn their income independently (Deenanath et al. 2019; Abdullah et al. 2017; Sabri 2011). By contrast, a study of Dutch adolescents shows that as adolescents develop attitudes of entitlement towards independent financial decisions as they enter high school, their positive attitudes towards parental authority declines (De Goede et al. 2009). Berzonsky (2011) also found that those students conscientiousness in money management increases with a sense of entitlement, such as employing critical thinking in seeking out spending alternatives. Kim and Chatterjee (2013) concludes from a study of US students that the expression of conflicting identities, values and judgements are attempts to assert financial

competence by decreasing parental monitoring. Nevertheless, research evidence also affirms that a sense of entitlement without positive attitudes towards conscientiousness likewise limits student ability to implement positive financial behaviour. Despite increased autonomy from parental influence and entitlement towards independent financial management, US college sophomores are 2.4 times more likely than first year students to suffer from overindebtedness (Hancock et al. 2013).

With regard to the financial literacy for Chinese learners, we conclude from the literature review that students who possess power distant values prevail with conscientiousness towards learning, but need to develop a stronger sense of entitlement to enhance their attitude towards financial literacy learning. Therefore, we adopt the position taken in the literature that both conscientiousness and entitlement are instrumental in the development of positive FB (Beutler and Gudmunson 2012; Letkiewicz and Fox 2014). To test this proposition, we are interested in finding out whether the possession of conscientiousness alone is sufficient for developing the requisite financial behavior among students who possess power distant values. Students with different values profiles will included in this study for comparison purposes (e.g. those who score lowly on power distance).

Financial behaviour (FB)

Financial behaviour (FB) can be defined as behaviour related to personal money management, specifically regulating current finances to achieve future financial wellbeing (Brüggen et al. 2017; Xiao 2008). We gained insight from the literature that to support students in managing their own finances effectively, financial literacy education needs to consider the influence of cultural identity (power distance) and its relationship with attitudes of conscientiousness and entitlement, because these aspects influence student ability in financial knowledge acquisition. To achieve a better understanding of students' FB, we distinguish FB by three major categories of behaviours that students require for effective personal financial management: (1) spending, (2) planning and (3) protection (Avard et al. 2005; Beal and Delpachitra 2003; Danna 2003; Hilgert et al. 2003; Huston 2010).

1. Spending

Spending behaviour refers to both planned and unplanned money expenditures to satisfy consumption needs and wants (Paulsen et al. 2008; Raghubir and Srivastava 2008; Stilley et al. 2010).

2. Planning

Planning behaviour refers to deferred consumer gratification, such as saving present resources, wealth accumulation through investment and repaying debts

(Arceo-Gomez and Villagomez 2017; Investor Education Centre 2015; Lusardi and Mitchell 2014).

3. Protection

Protection behaviour refers to the protection of personal resources through financial behaviours such as the purchase of insurance products or, in today's context, via risk management techniques such as personal identity protection (Huston 2010). Such behaviour protects individuals from the potential loss of resources resulting from exposure to risks (e.g., internet purchases) (Born 2018). Protection is therefore an indicator of positive FB whereby students demonstrate the ability to make informed financial decisions (Hilgert et al. 2003).

From the literature, we gain insight into the significance of Chinese hierarchical culture and the importance of complementing conscientiousness with entitlement to develop positive FA for students to acquire the ability to carry out financial management effectively. To do this, we need to (1) understand the identity effects of power distance on diverse learners and (2) understand how FA interacts with power distance cultures, so we can develop theoretically informed recommendations to support students to acquire self-identities that support effective financial literacy learning.

Theoretical lens

Identity grafting

In this paper, we use the theory of identity grafting to frame our understanding of how Chinese students who are inclined towards power distance cultural values engage in identity work as they develop financial literacy. Lee and Chiu (2017) developed this theory based on an examination of how Chinese professionals engage in identity work, or grafting, to reconcile tensions between the need for progressive change and the traditional practices to which they are accustomed. The adoption of this theoretical lens provides a framework for a discussion of the diverse types of identity work that may underlie individual responses as students seek to achieve change in practice. The use of identity grafting is particularly relevant because it is developed to study how individual who differ in power distance values respond with diverse approaches to teaching and learning. The typologies—repression, born-again, integrated and situational—characterise identity strategies to overcome power distance cultures so that the desired practices can be implemented effectively. The four typologies of identities that underpin different approaches help us understand the contingent effects of power distance in relation to financial literacy. We draw on research findings that surfaced in the literature review on power distance and financial literacy as examples to the plausible approaches to financial literacy learning that may surface among the students in this study, and how they may be attributed to and explained by these typologies.

1. Repression

Identity repression refers to the curbing of self-identity to fulfil expectations of authoritative figures (e.g., parents and teachers) regarding appropriate FB. For example, because of the lack of a sense of entitlement to manage personal finances, students who are overly conscientious in emulating authoritative figures uncritically may be less capable of managing their cash flows than their more autonomous peers (Abdullah et al. 2017; Sabri 2011; Shim et al. 2013).

2. Born-again

Born-again identity involves resisting control by doing the opposite of that expected by authoritative figures. Research likewise shows that students lose financial conscientiousness as they assert a sense of financial entitlement. For example, students who reject parental guidance because of parental overcontrol in their senior secondary years report higher levels of distrust towards authoritative figures and as a result, develop inadequate self-regulatory and coping skills (Baker and Hoerger 2012).

3. Situationalism

Identity situationalism refers to an assertion of financial entitlement that lacks conscientiousness in heeding advice from authoritative figures. In contrast to other forms of student identity, students who relate to FLE with situationalist identities give little consideration to whether the source of advice comes from authoritative figures, such as teachers or parents. Instead, they pay attention primarily to information that resonates with their personal financial experiences. This is exampled by students who seek out, process and critically evaluate new information to inform buying choices (Berzonsky 2004, 2011).

4. Integration

Integration refers to FB that taps into and combines two or more of the student's self-identity domains. An example of integrative strategies is students who demonstrate financial attitudes where a sense of self-entitlement is complemented by conscientiousness (Beutler and Gudmunson 2012). Both situationalist and integrationist students are less sensitive towards whether financial advice comes from authoritative sources. However, while situationalist students rely on their personal experiences to make financial decisions, they are less conscientious than integrationist students in seeking out further financial knowledge to enrich their personal experiences.

In summary (see Fig. 2), we expect born-again identities to be most hindering to learning financial behaviours. Although highly self-entitled, these students tend to be less conscientious in financial management, and instead disperse their energies on resisting authoritative influence. Repressive and situationalist identities possess both facilitating and hindering attributes. Unlike students with born-again identities, students with situationalist identities are less likely to distrust authoritative figures although they are more likely to process information more critically. Nevertheless, in contrast to students with repressive identities, students with situationalist

identities are less conscientious in financial management. We expect integrationist identities to be most favourable for learning financial behaviours. These students are highly conscientiousness, and they process information critically rather than take the word of authoritative figures for granted.

Research purpose and questions

In this paper, the two identity domains under investigation are students' values toward power distance and FA towards receiving financial advice. We examine how highly power distant students can overcome repression identities when obeisance to authoritative figures is integrated with a stronger sense of entitlement. We examine how students who possess high power distance self-identity can still be supported in developing good FB with the inculcation of conscientious F A. We first examine how students' power distance values related to FB by using correlation analysis:

> **RQ1**: How does student power distance relate to FB in terms of spending, protection and planning?

We further explore the influence of power distance and financial attitudes on FB currently using structural equation modelling:

> **RQ2**: When taking FA into account, how do power distance relate to FB in terms of spending, protection and planning?

The discussion of the research findings integrates the various constructs to identify appropriate FLE support for students demonstrating diverse self-identities who are situated in high power distance contexts. We explain these constructs in terms of Lee's (2017) theory of identity grafting to provide an exhaustive explanation of how power distance and financial attitude interact to shape diverse FB outcomes.

Research methodology

Research context

Hong Kong was chosen as the site of study because FLE is widespread in most Hong Kong secondary schools, and its importance is underscored by standardised territory-level examinations. Financial education became part of the secondary school curriculum in business, accounting and financial studies in 2009 (Curriculum Development Council & Hong Kong Examinations and Assessment Authority 2007). Ho and Lee (2020) performed a review of the Hong Kong financial competence framework, noting its close alignment with international benchmarks for financial literacy (OECD 2011): income, savings, spending, consumer credit, cash flow, financial goal setting, and marking investment. In the past decade, around one-fifth of all local students studied FL (Hong Kong Examinations and Assessment Authority 2018). Many schools developed a school-based financial education curriculum and participated in

financial education initiatives, giving students from different social-economic and cultural backgrounds the opportunity to study FL (Investor Education Centre 2018).

Participants

Participants were secondary students enrolled in FLE in the academic year 2018. The research team sent invitation letters to all of the secondary schools in Hong Kong. A total of 1164 students from 29 secondary schools returned the survey by post. 294 students are from the junior form, while 870 students are from the senior form. 53.8% of participants are female. Most students are at age 15 (27.7%) and 16 (30.9%).

Measurements

Data were collected via a survey questionnaire comprising 22 items measuring power distance, financial attitude and FB in spending, protection and planning. All of the items were measured using 6-point Likert scales. This study used the OECD (2018) toolkit for measuring financial literacy to measure FA and FB. The items were designed to measure FA conscientiousness. Because Chinese is the primary language of instruction in local secondary schools, the researcher formed a committee (the Author, a linguistic graduate, local teachers and a representative from the Hong Kong Economic Journal) to translate the questionnaire. We use measures of power distance adapted from Hofstede's (2001) original measures, because the adapted measures have been validated in Hong Kong and Singapore and is available in both Chinese and English versions (Lee and Lee 2018).

Independent variables

The independent variables are power distance and financial attitude. Five items were used to measure power distance (e.g., People with lower status should not object to the decision-making of higher-ranking people). The α coefficient for the measure of power distance was 0.879. FA was also measured by five items (e.g., I appreciate the value of teachers' financial advice; $\alpha = 0.867$).

Dependent variables

The dependent variables are FB in spending, protection and planning. FB in spending was measured using five items (e.g., Before I buy something, I carefully consider whether I can afford it; $\alpha = 0.86$); FB protection was measured using four items (e.g., I will not casually log in/register personal data on a public network; $\alpha = 0.713$; and FB planning was measured using three items (e.g., I set long-term financial goals and strive to achieve them; $\alpha = 0.862$).

Data analysis

Correlation analysis was used to explore the plausible relationships between the constructs. Structural equation modelling (SEM) was then used to test the paths of influence of power distance and financial attitude FB in spending, protection and planning. The measurement models were tested to examine the distinctiveness of the measures. Then, the nested structural model test was used to test the research hypotheses (Schreiber et al. 2006). As the research goal is to model the effects of the latent variables at a given level of generality, parcelling is warranted because appropriate parcelling of items can minimise the effects of nuisance factors at a lower level of generality (Little et al. 2002). Therefore, both unidimensional (Power distance and FA) and dimensional (FB in spending, protection and planning) constructs were combined using the highest loading items (Hau et al. 2004), whereas the lowest loading items are eliminated. To test the model fit, we used a combination of tests, including the root mean square error of approximation (RMSEA), comparative fit index (CFI) and confidence interval (CI). The cut-off values distinguishing good model fit are RMSEA (<0.06), TLI (>0.90) and IFI (>0.90) (Chen et al. 2014; Steiger 2007).

Results

Descriptive statistics

We surveyed 1164 students (46% male; 54% female) from 29 secondary schools. The mean age was 15.8 ($SD=1.13$), and 75% of participants were senior secondary students.

RQ1: How does student power distance relate to FB in terms of spending, protection and planning?

Correlation analysis

The correlation analysis results show a significant and negative relationship between power distance and FB in protection ($r=-0.131$, $p\leq0.01$), but a positive relationship between power distance and FB in planning ($r=0.082$, $p\leq0.01$). That is, students who scored high on power distance scored lower on FB in protection but higher on FB in planning. This means that hierarchically inclined students are more able to demonstrate planning behaviours, but less in protection. Conversely, students who scored low on power distance scored higher in FB in protection but lower on FB in planning. This means that students who are low in hierarchical consciousness are more able to demonstrate protection behaviours, but less in planning. Further, the results show significant positive relationship between FA and all

FB measurements. That is, students who scored high on FA also scored high on FB in spending ($r=0.485$, $p \leq 0.01$), protection ($r=0.493$, $p \leq 0.01$) and planning ($r=0.582$, $p \leq 0.01$). This means that highly conscientious students are more able to demonstrate all behaviours that promote financial well-being (i.e., spending, protection and planning). See Table 2.

RQ2: How do student power distance and FA relate to FB in terms of spending, protection and planning?

Model testing

To ensure whether all of the variables in the model were distinct constructs and the results were not caused by the potential impact of common method variance, we compared separate measurement models for the measures used. We compared a hypothesised five-factor model (M_1: Power distance, FA, FB in spending, FB in protection and FB in planning) with three alternative four-factor models and one three-factor model (M_2, M_3, M_4 and M_5; see the note for Table 3 for a detailed description). The results presented in Table 3 suggest that M_1 fit the data better than the alternative models.

SEM

We conducted structural equation modelling with variable power distance, FA, FB in spending, FB in protection and FB in planning. The SEM absolute values are $\chi^2=983.91$; $df=199$; $p<0.001$; IFI = 0.94; TLI = 0.93; RMSEA = 0.058. The model produced a good fit to the data (Chen et al. 2014). The relationship and parameter estimates are shown in Fig. 1.

SEM results show that all of the estimated relationships were significant except for that between power distance and FB in protection ($\beta=0.03$, $p=$n.s.) and FB in planning ($\beta=0.01$, $p=$n.s.). That is, when FA is considered in tandem with power distance, the two constructs that were previously significantly related to power distance in the correlational analysis have decreased significantly in their effect sizes. With regard to FB in protection, the negative relationship between power distance and FB protection has weakened in its effect size with the interaction between power distance and FA. This means that hierarchically inclined students who are nevertheless conscientious in financial literacy learning are able to overcome the negative effects of being overly reliant on the expertise of authoritative figures, which would otherwise inhibit their ability to engage in calculated risk-taking. Conversely, students low in hierarchical consciousness may be more independent in making financial decisions, but if lacking in conscientiousness, may still fail to engage in calculated risk-taking.

While correlational analysis showed that the relationship between power distance and spending behaviour is statistically insignificant, SEM results indicated a significant negative effect of power distance on FB in spending ($\beta=-0.10$, $p<0.01$). That is, the interacting effect between power distance and FA results in negative FB in

spending, so students who scored highly on both power distance and FA also scored lowly on FB in spending. This means that students who are conscientious but hierarchically inclined are less able to demonstrate positive spending behaviours than their peers who are conscientious but low in hierarchical consciousness. Most importantly, in comparison to previous correlation results, the effect size of FA's influence on FB strengthened in all aspects when the influence of power distance and FA are considered in tandem—in spending ($\beta = 0.57$, $p < 0.01$), in protection ($\beta = 0.54$, $p < 0.01$), and in planning ($\beta = 0.648$, $p < 0.01$).

Finally, as power distance is a dual-scale construct, the results also correspondingly reveal insights about students who score lowly in power distance when the interacting effects of FA are taken into consideration ($\beta = 0.12$, $p < 0.01$). In the correlation analysis shows that students who are low in hierarchical consciousness are more able to demonstrate protection behaviours ($r = 0.493$, $p \leq 0.01$), but less in planning ($r = 0.582$, $p \leq 0.01$). The SEM analysis shows that when conscientiousness is factored into consideration, the power distance reduced significantly in its effects on FB not only in protection ($\beta = 0.03$, $p =$ n.s.), but also in planning ($\beta = 0.01$, $p =$ n.s.). Further, in comparison to the correlation analysis, SEM results show that the effects in FB in spending increased significantly ($\beta = -0.10$, $p < 0.01$) when power distance and FA are considered concurrently. That is, while scores in power distance and FB in spending ($r = -0.009$, $p =$ n.s.) were statistically insignificant in the correlation analysis, the effect size increased significantly in the SEM analysis. This means that conscientiousness not only help hierarchically inclined students overcome the challenges to demonstrating positive behaviours in calculated risk-taking, but also enabled students who are low in hierarchical consciousness improve their financial planning and spending behaviours.

Discussion

The present study aimed to empirically validate the theory of identity grafting put forward by Lee and Chiu (2017) in the context of student financial literacy in Hong Kong, which is located in a Chinese hierarchical context. By employing the framework, we aim to construct theoretically-informed practical recommendations to how FLE can support students with diverse self-identities in personal finance management in acquiring positive FB. We conducted a correlation analysis followed by SEM to support this investigation. In this section, we discuss the findings and explain using constructs of identity grafting how power distance and FA influence student FB.

RQ1: How does student power distance relate to FB in terms of spending, protection and planning?

First, the initial correlation analysis showed that hierarchically inclined (power distant) students are more likely to be able to demonstrate financial planning (FB), but less in calculated risk-taking (FB in protection). Conversely, students who are

low in hierarchical consciousness are more likely to be able to demonstrate calculated risk-taking, but less in financial planning. In addition, the more conscientious students are, the more likely they are able to demonstrate all behaviours that promote financial well-being (i.e., spending, protection and planning).

RQ2: How do student power distance and FA relate to FB in terms of spending, protection and planning?

Second, the follow up SEM results showed that when the influence of power distance and FA are considered in tandem, the results become more nuanced. First, students who are conscientious but hierarchically inclined are less able to demonstrate positive spending behaviours than their peers who are conscientious but low in hierarchical consciousness. Second, hierarchically inclined students who are nevertheless conscientious in financial literacy learning are able to overcome the negative effects of being overly reliant on the expertise of authoritative figures, which would otherwise inhibit their ability to engage in calculated risk-taking. Third, conscientious students who are low in hierarchical consciousness improve their financial planning and spending behaviours.

Theoretical and practical implications

As we did not measure student attitudes towards FA entitlement, we discuss the theoretical and practical implications of our findings only in relation to FA conscientiousness. We discuss the implications by typologising the results in terms of plausible identity personas in terms of their FA attitudes and level of hierarchical consciousness (see Fig. 2).

1. Repressed identity: hierarchically inclined and conscientious

The possession of hierarchical consciousness decreases student likelihood of demonstrating ability in calculated risk-taking, but this challenge can be overcome with conscientiousness in acquiring financial literacy. However, hierarchically inclined and conscientious students are at the same time challenged in demonstrating positive spending behaviours. We apply the typology of identity repression and the literature on conscientiousness as FA to explain the results. The literature explains that because of the lack of a sense of entitlement to manage personal finances, students who are overly conscientious in emulating authoritative figures uncritically may be less capable of managing their cash flows than their more autonomous peers (Abdullah et al. 2017; Sabri 2011; Shim et al. 2013). This resonates with identity repression, where individuals curb their self-identity to fulfil expectations of authoritative figures.

The application of identity repression offered an explanation to the results in this study, in that learners' self-identity runs the risk of being repressed as they seek to uncritically—albeit conscientiously—emulate authoritative figures who have expertise. Further, the results in this study offered headways to highlight

that students who demonstrate these attributes are challenged in the domain of FB in spending. That is, identity repression may arise as they seek to repress their own intuitive understanding of personal financial management at the expense of replicating expertise that they have yet to embody. To improve the ability of this segment of students in carrying out positive financial behaviour, we can encourage them to critically assess whether the financial knowledge they learnt are relevant to their personal experiences, so they can sharpen their abilities in exercising appropriate financial decision-making in real financial scenarios (Shim et al. 2013).

2. Born-again identity: hierarchically inclined and unconscientious

When hierarchical consciousness is coupled with a lack of conscientiousness, the potential for developing positive financial planning behaviours is significantly reduced. We apply the born-again identity typology and the literature on FA to explain the results. Research shows that students reject parental guidance because of parental overcontrol in their senior secondary years, which results from the inadequate development of self-regulatory and coping skills (Baker and Hoerger 2012). This resonates with expressions of born-again identities, where the consciousness of hierarchical inequality results in efforts to resist authority by refusing to obey and to engage in self-regulation. Applying these insights to develop the theoretical implications of this study, we conclude that students whose sense of conscientiousness is weakened by an overwhelming sense of dispossession, and this manifests in born-again self-identities in the rejection of authoritative expertise, which reduces their ability to be planning financially for their future. To support the learning of students with born-again identities, teaching and parental advice can target student development of self-regulatory skills (e.g., critical thinking). In contrast, the focus on imposing parental or teacher control may trigger student resistance when they feel dispossessed from the autonomy to make their own financial decisions.

The application of born-again identity offered a synergistic reading to the results in this study and the broader literature on entitlement as FA. The results in this study advances explanations to how parental overcontrol decreased self-regulatory and coping skills (Baker and Hoerger 2012). Born-again resistance may arise when students are conscious of the hierarchical differences in the learning environment (e.g., inequality between teacher and learner, or among students), and this consciousness is complemented by reduced conscientiousness towards financial literacy learning. We gain insight into possible solutions for overcoming the learning challenges of this segment of students from the broader literature. A practical recommendation for supporting this segment of students in bridging the gap in financial planning literacy may be to reduce conditions that result in inequality in the learning environment.

3. Situationalist identity: Low hierarchical consciousness and unconscientious

Students low in hierarchical consciousness demonstrate the potential for higher ability in calculated risk-taking. However, in the case where these students lack

conscientiousness, their potential for demonstrating FB in protection is significantly reduced. We apply the typology of identity situationalism and the literature on conscientiousness as FA to explain the results. The literature explains that students with a strong sense of entitlement may actively seek out, process and critically evaluate new information to make informed buying choices (Berzonsky 2004, 2011). This resonates with identity situationalism, where individuals acquire financial literacy through their own experiences.

The application of identity offered an explanation to the higher potential for students with low hierarchical consciousness in carrying out calculated financial risk-taking—they actively seek out, process, and critically evaluate new information on how to protect themselves when engaged in financial risk-taking. However, the ability for students in this study to carry out appropriate FB in protecting themselves from risk failures is reduced when they are unconscientious about financial literacy learning. That is, students who are situationalist learners may over-rely on their own intuitive understanding of personal financial management, thus exposing themselves to risk-taking at great costs. Research on financial literacy that showcases overindebtedness with a stronger sense of entitlement (Hancock et al. 2013) resonates with identity situationalism and this segment of students in this study. Linking the findings to identity grafting and literature on financial literacy, practical implications may involve supporting this segment of students with greater school involvement in developing conscientiousness as FA, taking reference from financial literacy literature on the positive influence of parental involvement on students' financial attitudes towards money management (Borden et al. 2008; Calderón-Tena et al. 2011; Sabri et al. 2010; Sohn et al. 2012).

4. Identity integration: low hierarchical consciousness and conscientious students

When low hierarchical consciousness is coupled with conscientiousness, the potential for developing positive financial spending behaviours is significantly increased. We apply the identity integration typology and the FA literature on the importance of complementing entitlement with conscientiousness to explain the results. Research shows that in addition to conscientiousness, the attitude of entitlement is also instrumental to developing positive FB (Beutler and Gudmunson 2012). This resonates with integrationist identities, where the individual seeks to offset strong self-entitlement with combines two or more of the student's self-identity domains.

Applying these insights to develop the theoretical implications of this study, we conclude that for students possess low hierarchical consciousness, their potential for calculated risk-taking transforms into the ability to demonstrate positive spending behaviour when they acquire an attitude of conscientiousness. In addition, as the findings show that hierarchically inclined students did not demonstrate positive spending behaviour despite the possession of an attitude of conscientiousness, we speculate that this segment of students may have an integrated FA that complements conscientiousness with a strong sense of self entitlement to

develop positive spending behaviour. A practical recommendation may be to further explore the development of student FA in both entitlement and conscientious in the financial literacy curriculum (Beutler and Gudmunson 2012).

The results in this study raise hope that individuals, regardless of whether they are strongly or weakly endorsing of power distance cultures, can overcome the challenges to acquiring positive FB in most domains of financial literacy if they are conscientious and feel entitled to financial literacy learning. These results resonate with Lee's (2017) findings that teachers can overcome power distant cultures to implement teaching practices informed by student-centred learning pedagogies. The theory of identity grafting provided a rigorous framework to explain the results in this study and make sense of the mixed results in the broader literature on financial literacy. Insights also emerged on the intracultural diversity of Chinese students. By applying the theory of identity grafting to the study of financial literacy, we discovered that the mixed results may relate to different segments of a student population. The Hong Kong approach to FLE may have fit well for students with the integrated identity of being conscientious in their FA, deferential towards authority and open to repressing self-identity to adopt the advice of authoritative figures. However, the same approach appeared to backfire with students who begin to over-rely on authoritative expertise (identity repression), resist authoritative figures by disengaging with learning (born-again identity), or are less sensitive towards hierarchical learning and relate poorly to these pedagogical approaches (situationalist identity).

Limitations

Some limitations of this study should be noted. First, as the focus of this study is the attitude of conscientiousness, students' attitude of entitlement was not measured. Future research that takes into account both conscientiousness and entitlement can provide a fuller picture of the influence of FA in cultivating positive FB.

Second, the present study did not assess the content of the curriculum design of school-based FL education. The quality and characteristics of these FLE are uncertain. Future studies with a greater emphasis on the discourse analysis of the curriculum will be useful in providing insights into how the nurturing of FA can be introduced into the curriculum.

Third, this paper focuses mainly on students' self-identity in personal financial management. Future studies can extend this understanding by investigating how authoritative figures, such as parents and teachers, contribute to socialising and developing students' self-identities.

Finally, the financial behaviours examined are based on OECD's conceptualizations of FB in planning, protection and spending. They are based on students' test performance on these attributes rather than authentic financial literacy behaviours. Future studies should employ more qualitative data to address these limitations.

Appendix 1: Abbreviations used in the passage

Abbreviation	Full form	Explanation
FLE	Financial Literacy Education	A process to acquire financial knowledge and skills in order to effectively manage personal finance and use financial resources to make proper decisions
FA	Financial Attitude	Refers to how an individual feel about personal financial management, which plays a crucial role in the individual's ability to understand, analyze and manage personal financial matters
FB	Financial Behaviour	Behaviour related to personal money management, specifically regulating current finances to achieve future financial wellbeing
SEM	Structural Equation Modelling	A multivariate statistical analysis technique for testing the paths of influence of power distance and financial attitude FB in spending, protection and planning, which ultimately examine the distinctiveness of the measures
RMSEA	The Root Mean Square Error of Approximation	A supplementary statistic to determine the discrepancy between the hypothesized model, with optimally chosen parameter estimates, and the population covariance matrix. The RMSEA ranges from 0 to 1, with smaller values indicating better model fit. A value of .06 or less is indicative of acceptable model fit
CFI	Comparative Fit Index	Analyzes the model fit by examining the discrepancy between the data and the hypothesized model, while adjusting for the issues of sample size inherent in the Chi squared test of model fit, and the normed fit index. CFI values range from 0 to 1, with larger values indicating better fit
CI	Confidence Interval	A type of interval estimation to describe the amount of uncertainty associated with a sample estimate of a population parameter

Abbreviation	Full form	Explanation
IFI	Incremental Fit Indices	Known as "Bollen's IFI", which is based on the comparison of the fit of a substantive model to that of a null model. Values that exceed 0.9 are regarded as acceptable
$\chi 2$	Chi square	The original fit index for structural models
df	Degrees of freedom	The number of parameters of the system that may vary independently
GFI	Goodness of Fit Index	A measure of fit between the hypothesized model and the observed covariance matrix
CFI	Comparative Fit Index	Analyzes the model fit by examining the discrepancy between the data and the hypothesized model, while adjusting for the issues of sample size inherent in the Chi squared test of model fit and the normed fit index. CFI values range from 0 to 1, with larger values indicating better fit
NFI[a]	Normed Fit Index	Known as "Bentler-Bonett normed fit index", which is an incremental measure of goodness of fit for a statistical model, which is not affected by the number of parameters/variables in the model. It analyzes the discrepancy between the Chi squared value of the hypothesized model and the Chi squared value of the null model. The fit index varies from 0 to 1—where 1 is ideal
TLI[a]	Tucker Lewis index	Known as "Non-normed fit index" (NNFI). It is an incremental measure of goodness of fit for a statistical model, which takes into account the size of the correlations in the data and the number of parameters in the model. This index provides an adjustment to the Normative Fit Index that incorporates the degrees of freedom in the model
OECD	The Organization for Economic Co-operation and Development	An international organization that works to build better policies for better lives. Our goal is to shape policies that foster prosperity, equality, opportunity and well-being for all

[a]Values for both the NFI and TLI should range between 0 and 1, with a cutoff of 0.95 or greater indicating a good model fit

Appendix 2: Tables and figures

See Tables 1, 2, 3 and Figs. 1, 2.

Table 1 Sample characteristics

Characteristic	N = 1164	Percentage
Level		
Secondary 3	294	25.3
Secondary 4	386	33.2
Secondary 5	361	31.0
Secondary 6	123	10.5
Gender		
Male	538	46.2
Female	626	53.8
Age		
14	159	13.7
15	323	27.7
16	360	30.9
17	241	20.7
18	81	7.0

Table 2 Means, standard deviations and intercorrelations between main variables (N = 1306)

Variable	*M*	*SD*	1	2	3	4
1. Power distance	2.39	1.18				
2. Financial Attitude	3.94	0.97	0.147**			
3. Financial behaviour in spending	4.41	1.02	−0.009	0.485**		
4. Financial behaviour in protection	3.811	1.00	−0.131**	0.493**	0.533**	
5. Financial behaviour in planning	3.99	1.09	0.082**	0.582**	0.608**	0.554**

*$p < 0.05$; **$p < 0.01$

Table 3 Model fit summary and measure models comparison (N = 1164)

Model	χ^2	*df*	*p*	GFI	CFI	NFI	RMSEA
Five-factor model (M_1)	983.91	199	< 0.001	0.93	0.94	0.93	0.058
Four-factor model (M_2)	1212.81	203	< 0.001	0.91	0.92	0.91	0.065
Four-factor model (M_3)	1268.67	203	< 0.001	0.90	0.92	0.91	0.067
Four-factor model (M_4)	1759.40	203	< 0.001	0.85	0.88	0.87	0.081
Three-factor model (M_5)	1908.54	206	< 0.001	0.84	0.87	0.86	0.084

χ^2 Chi square, *df* degrees of freedom, GFI goodness of fit index, *CFI* comparative fit index, *NFI* normed fit index, *RMSEA* root mean square error of approximation

M_2 is the same as M_1 except that all items for FB in protection and planning loaded on the same factor

M_3 is the same as M_1 except that all items for FB in spending and protection loaded on the same factor

M_4 is the same as M_1 except that all items for FB in spending and planning loaded on the same factor

M_5 is the same as M_1 except that all FB loaded on the same factor

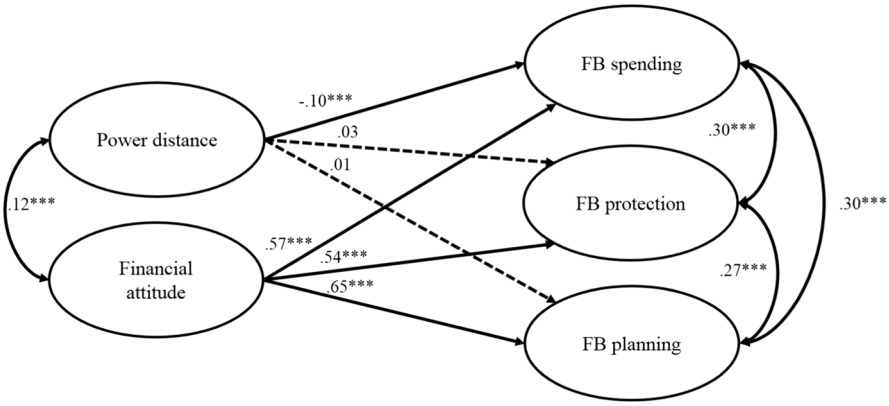

Fig. 1 Summary of standardised coefficient for the hypothesised mode with the full sample (N = 1164). *Note* ***$p < 0.01$

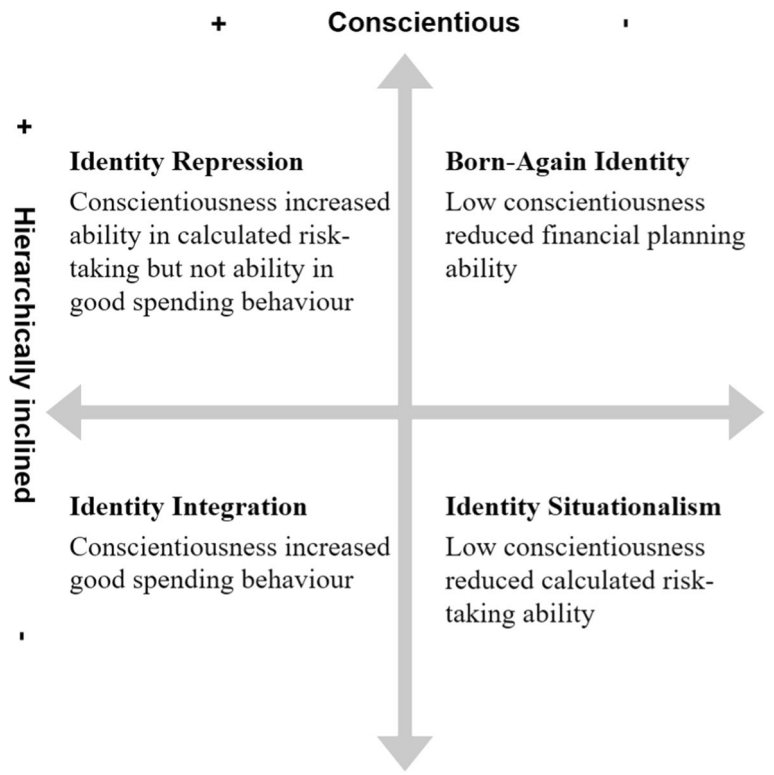

Fig. 2 A theoretical model of identity grafting in student financial literacy learning

References

Abdullah, S., Mohammed, N. H., Salleh, S. M., Rashid, K. M., & Kamal, S. S. S. M. (2017). Financial literacy among UiTM's students. *Journal of Applied Environmental and Biological Sciences, 7*(5S), 31–36.

Arceo-Gomez, E. O., & Villagomez, F. A. (2017). Financial literacy among Mexican high school teenagers. *International Review of Economics Education, 24,* 1–17.

Avard, S., Manton, E., English, D., & Walker, J. (2005). The financial knowledge of college freshmen. *College Student Journal, 39*(2), 321–340.

Baker, C. N., & Hoerger, M. (2012). Parental child-rearing strategies influence self-regulation, socio-emotional adjustment, and psychopathology in early adulthood: Evidence from a retrospective cohort study. *Personality and Individual Differences, 52*(7), 800–805.

Beal, D. J., & Delpachitra, S. B. (2003). Financial literacy among Australian university students. *Economic Papers: A Journal of Applied Economics and Policy, 22*(1), 65–78.

Berzonsky, M. D. (2004). Identity style, parental authority, and identity commitment. *Journal of Youth and Adolescence, 33*(3), 213–220.

Berzonsky, M. D. (2011). A social-cognitive perspective on identity construction. In *Handbook of identity theory and research* (pp. 55–76). New York, NY: Springer.

Beutler, I., & Gudmunson, C. (2012). New adolescent money attitude scales: Entitlement and conscientiousness. *Journal of Financial Counseling and Planning, 23*(2), 18.

Borden, L. M., Lee, S. A., Serido, J., & Collins, D. (2008). Changing college students' financial knowledge, attitudes, and behavior through seminar participation. *Journal of Family and Economic Issues, 29*(1), 23–40.

Born, P. (2018). Financial consumer protection in the United States. In *An international comparison of financial consumer protection* (pp. 379–404). Singapore: Springer.

Brüggen, E. C., Hogreve, J., Holmlund, M., Kabadayi, S., & Löfgren, M. (2017). Financial well-being: A conceptualization and research agenda. *Journal of Business Research, 79,* 228–237.

Calderón-Tena, C. O., Knight, G. P., & Carlo, G. (2011). The socialization of prosocial behavioral tendencies among Mexican American adolescents: The role of familism values. *Cultural Diversity and Ethnic Minority Psychology, 17*(1), 98.

Chen, X. P., Tsui, A. S., Farh, L. J. L., & Cheng, B. S. (2014). *Empirical methods for research in organization and management*. Taipei: Hwatai Publication. **(in Chinese)**.

Cheng, A. Y., & Szeto, E. (2016). Teacher leadership development and principal facilitation: Novice teachers' perspectives. *Teaching and Teacher Education, 58,* 140–148.

Curriculum Development Council and the Hong Kong Examinations and Assessment Authority. (2007). *Business, accounting and financial studies curriculum and assessment guide (secondary 4–6).*Retrieved from https://334.edb.hkedcity.net/doc/chi/curriculum2015/BAFS_CA_Guide_e_2015.pdf.

Danna, M. (2003). *Survey of financial literacy in Washington State: Knowledge*. Retrieved from http://www.dfi.wa.gov/news/finlitsurvey.pdf.

De Goede, I. H., Branje, S. J., & Meeus, W. H. (2009). Developmental changes in adolescents' perceptions of relationships with their parents. *Journal of Youth and Adolescence, 38*(1), 75–88.

Deenanath, V., Danes, S. M., & Jang, J. (2019). Purposive and unintentional family financial socialization, subjective financial knowledge, and financial behavior of high school students. *Journal of Financial Counseling and Planning, 30*(1), 83–96.

DuFour, R., DuFour, R., & Eaker, R. (2010). Revisiting professional learning communities at work: New insights for improving schools. *Teacher Librarian, 37*(4), 75.

Edwards, R., Allen, M. W., & Hayhoe, C. R. (2007). Financial attitudes and family communication about students' finances: The role of sex differences. *Communication Reports, 20*(2), 90–100.

Fu, X., Lv, Y., Yang, Z., Yu, X., & Wang, R. (2018). Chinese adolescents' power distance value and prosocial behavior toward powerful people: A longitudinal study. *PLoS ONE, 13*(12), e0208473.

Hallinger, P., & Lu, J. (2014). Modelling the effects of principal leadership and school capacity on teacher professional learning in Hong Kong primary schools. *School leadership & management*, *34*(5), 481–501.

Hancock, A. M., Jorgensen, B. L., & Swanson, M. S. (2013). College students and credit card use: The role of parents, work experience, financial knowledge, and credit card attitudes. *Journal of Family and Economic Issues, 34*(4), 369–381.

Hanson, T. A., & Olson, P. M. (2018). Financial literacy and family communication patterns. *Journal of Behavioral and Experimental Finance, 19,* 64–71.

Hau, K. T., Wen, Z. L., & Cheng, Z. J. (2004). *Structural equation model and its applications*. Beijing: Educational Science Publishing House. **(in Chinese)**.

Hilgert, M. A., Hogarth, J. M., & Beverly, S. G. (2003). Household financial management: The connection between knowledge and behavior. *Federal Reserve Bulletin, 89,* 309.

Ho, C. S., & Lee, D. H. L. (2020). School banding effects on student financial literacy acquisition in a standardised financial literacy curriculum. *The Asia-Pacific Education Researcher*, *29*, 377–391.

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. Thousand Oaks: Sage publications. https://doi.org/10.1371/journal.pone.0208473.

Hogarth, J. M. (2002). Financial literacy and family & consumer sciences. *Journal of Family and Consumer Sciences*, *94*(1), 14.

Huhmann, B. A., & McQuitty, S. (2009). A model of consumer financial numeracy. *International Journal of Bank Marketing, 27*(4), 270–293.

Huston, S. J. (2010). Measuring financial literacy. *Journal of Consumer Affairs, 44*(2), 296–316.

Ibrahim, M. E., & Alqaydi, F. R. (2013). Financial literacy, personal financial attitude, and forms of personal debt among residents of the UAE. *International Journal of Economics and Finance, 5*(7), 126–138.

Investor Education Center. (2018). *A stocktake of financial education initiatives in Hong Kong*. Hong Kong: Investor Education Center. Retrieved from https://www.ifec.org.hk/common/pdf/about_iec/iec-stocktake-of-financial-education-initiatives2018.pdf.

Investor Education Centre. (2015). *Hong Kong Financial Competency Framework*. Retrieved from https://www.ifec.org.hk/common/pdf/fcf/hkfcf_booklet.pdf.

Kim, J., & Chatterjee, S. (2013). Childhood financial socialization and young adults' financial management. *Journal of Financial Counseling and Planning, 24*(1), 61.

Lau, K. C., Ho, E. S. C., & Lam, T. Y. P. (2015). Effective classroom pedagogy and beyond for promoting scientific literacy: Is there an East Asian Model?. In *Science education in East Asia* (pp. 13–40). Cham: Springer.

Lee, D. H. L., & Chiu, C. S. (2017). "School banding" Principals' perspectives of teacher professional development in the school-based management context. *Journal of Educational Administration, 55*(6), 686–701.

Lee, D. H. L., & Lee, W. O. (2018). Transformational changes in instruction with professional learning communities?: The influence of teacher cultural dispositions in high power distance contexts. *Journal of Educational Change*, *19*(4), 463–488.

Letkiewicz, J. C., & Fox, J. J. (2014). Conscientiousness, financial literacy, and asset accumulation of young adults. *Journal of Consumer Affairs, 48*(2), 274–300.

Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel of not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling, 9,* 151–173.

Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature, 52*(1), 5–44.

Mandell, L. (2006). *Financial literacy: Improving education results of the 2006 national Jump $ tart survey*. Washington, DC: Jumpstart Coalition.

Monea, I. S., Bengaa, O., & Opreb, A. (2016). Cross-cultural differences in socialization goals as a function of power distance, individualism-collectivism and education. *Romanian Journal of Experimental Applied Psychology, 7,* 330–334.

Ning, H. K., Lee, D. H. L., & Lee, W. O. (2016). The relationship between teacher value orientations and engagement in professional learning communities. *Teachers and Teaching: Theory and Practice*, *22*(2), 235–254.

Organization for Economic Co-operation Development. (2011). *Measuring financial literacy: Questionnaire and guidance notes for conducting an internationally comparable survey of financial literacy*.

Organization for Economic Co-operation Development. (2014). *PISA 2012 results: Students and money (Volume VI): Financial literacy skills for the21st century (PISA)*. Paris: OECD Publishing. https://doi.org/10.1787/9789264208094-en.

Organization for Economic Co-operation Development. (2015). *Financial knowledge questions in the 2015 OECD/INFE toolkit for measuring financial literacy and financial inclusion. Financial education in Europe: Trends and recent developments* (pp. 66–67). Paris: OECD Publishing.

OECD, O. (2018). *INFE toolkit for measuring financial literacy and financial inclusion*. Paris: Organisation for Economic Co-operation and Development.

Paulsen, K., Hughes, I., & Holland, M. (2008). US Patent Application No. 11/609,785.

Raghubir, P., & Srivastava, J. (2008). Monopoly money: The effect of payment coupling and form on spending behavior. *Journal of experimental psychology: Applied, 14*(3), 213.

Sabri, M. F. F. (2011). Pathways to financial success: Determinants of financial literacy and financial well-being among young adults.

Sabri, M. F., MacDonald, M., Hira, T. K., & Masud, J. (2010). Childhood consumer experience and the financial literacy of college students in Malaysia. *Family and Consumer Sciences Research Journal, 38*(4), 455–467.

Sari, R. C., & Fatimah, P. R. (2017). Bringing voluntary financial education in emerging economy: Role of financial socialization during elementary years. *The Asia-Pacific Education Researcher, 26*(3–4), 183–192.

Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of educational research, 99*(6), 323–338.

Schwartz, S. H. (2006). A theory of cultural value orientations: Explication and applications. *Comparative Sociology, 5*(2), 137–182.

Shim, S., Serido, J., Bosch, L., & Tang, C. (2013). Financial identity-processing styles among young adults: A longitudinal study of socialization factors and consequences for financial capabilities. *Journal of Consumer Affairs, 47*(1), 128–152.

Sohn, S. H., Joo, S. H., Grable, J. E., Lee, S., & Kim, M. (2012). Adolescents' financial literacy: The role of financial socialization agents, financial experiences, and money attitudes in shaping financial literacy among South Korean youth. *Journal of Adolescence, 35*(4), 969–980.

Steiger, J. H. (2007). Understanding the limitations of global fit assessment in structural equation modeling. *Personality and Individual Differences, 42*(5), 893–898.

Stilley, K. M., Inman, J. J., & Wakefield, K. L. (2010). Spending on the fly: Mental budgets, promotions, and spending behavior. *Journal of Marketing, 74*(3), 34–47.

The Curriculum Development Council & The Hong Kong Examinations and Assessment Authority. (2015). *Liberal studies curriculum and assessment guide (secondary 4–6)*. Retrieved from https://ls.edb.hkedcity.net/file/C_and_A_guide/201511/LS_CAGuide_e_2015.pdf.

The Education Bureau. (2019). *Task force on review of school curriculum*. Retrieved from https://www.edb.gov.hk/attachment/en/about-edb/press/consultation/TF_CurriculumReview_Consultation_e.pdf.

Tsai, S. L., Smith, M. L., & Hauser, R. M. (2017). Families, schools, and student achievement inequality: A multilevel MIMIC model approach. *Sociology of Education, 90*(1), 64–88.

Vitt, L. A., Anderson, C., Kent, J., Lyter, D. M., Siegenthaler, J. K., & Ward, J. (2000). *Personal finance and the rush to competence: Financial literacy education in the US*. Institute for Socio-Financial Studies Working Paper. http://www.isfs.org/documentspdfs/rep-finliteracy.pdf.

Watkins, D. A., & Biggs, J. B. (1996). *The Chinese learner: Cultural, psychological, and contextual influences*. Comparative Education Research Centre, Faculty of Education, University of Hong Kong, Pokfulam Road, Hong Kong; The Australian Council for Educational Research, Ltd., 19 Prospect Hill Road, Camberwell, Melbourne, Victoria 3124, Australia.

Watkins, D., & Biggs, J. (2001). *Teaching the Chinese learner: Psychological and pedagogical perspectives*. Hong Kong: Comparative Education Research Centre, The University of Hong Kong.

Xiao, J. J. (2008). Applying behavior theories to financial behavior. In *Handbook of consumer finance research* (pp. 69–81). New York, NY: Springer.