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Testing the Associations among Social Axioms, School Belonging, and Flourishing in University Students: A Two-Year Longitudinal Study

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Background: This longitudinal study investigated the temporal stability of social axioms, which are generalised social beliefs, and tested their prospective effects on individuals' flourishing, among students, as well as the extent to which they can be potentially mediated by perceived sense of belonging at school. **Methods:** Participants were 195 Chinese university students, who voluntarily completed a questionnaire measuring social axioms (at baseline, 1-year follow-up, and 2-year follow-up studies), school belonging (at 1-year follow-up study), and flourishing (at baseline and 2-year follow-up studies). **Results:** Results showed supportive evidence for five types of social axioms being generally stable across these time intervals. After controlling for baseline flourishing, high baseline social cynicism significantly predicted a lower level of follow-up flourishing, whereas high baseline reward for application predicted a higher level of follow-up flourishing. Furthermore, higher levels of social cynicism predicted lower levels of school belonging, and the latter partially mediated the effect of social cynicism on follow-up flourishing. **Conclusions:** All social axioms are relatively stable across time. Social cynicism, reward for applications, and school belonging are the most salient predictors for flourishing among Chinese university students.

Keywords: flourishing, school belonging, social axioms, university students

INTRODUCTION

Social axioms are defined as "generalized beliefs about oneself, the social and physical environment, or the spiritual world" (Leung et al., 2002, p. 289). Social axioms aim to explore universal beliefs systems at the individual level and explain cultural differences in terms of belief system (Leung et al., 2002). Five

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generalised social beliefs, which are believed to be universal across cultures, were identified in previous studies, namely social cynicism (i.e. negative beliefs with respect to social constructs and human nature), reward for application (i.e. belief that one's application of resources and exertion of effort will bring positive outcomes), social complexity (i.e. belief in flexible ways to deal with problems and to achieve desired outcomes), fate control (i.e. belief in the predetermination of external factors),and religiosity (i.e. belief in the beneficial effect of religious institutions and spiritual forces; Leung & Bond, 2004; Leung et al., 2002; Leung et al., 2012). Social axioms, as general beliefs regarding social contexts and human beings, influence how people perceive, interpret, and react to events in their lives and hence are major determinants of their global evaluations of life and accompanying emotional experiences (Leung & Bond, 2004). In this study, social axioms were longitudinally assessed three times in 2 years among Chinese university students. We aimed to test (1) whether social axioms would be stable attributes across time, (2) whether social axioms would predict university students' flourishing, and (3) whether social axioms would predict university students' school belonging which would in turn promote their flourishing (i.e. a mediation).

Temporal Stability of Social Axioms

According to Leung et al. (2002), social axioms are conceptualised as relatively stable convictions held at both the individual and the cultural levels. The coherence of social axioms across situations and time is a critical assumption when using them to describe individual or cultural differences and predict consequences. Leung et al. (2012) compared the data collected at different times to demonstrate the high temporal stability of social axioms at the societal level (mean $r = .75$). However, there is limited knowledge regarding their temporal stability at the individual level. Only two dimensions of social axioms (i.e. social cynicism and social complexity) have been examined longitudinally, and the former was found to be moderately stable ($r < .40$; Leung et al., 2010), whereas the latter was mildly to moderately stable (Goodwin, Polek, & Bardi, 2012). In order to further verify the conceptual assumption regarding temporal stability of social axioms, one of the aims of our study was to address the current knowledge gap by measuring all five social axiom variables over three time points (Time 1 [T1], Time 2 [T2], and Time 3 [T3]) and 2 years.

Social Axioms and Flourishing

There is no study addressing the relation between social axioms and flourishing but there were a few studies focusing on subjective well-being (SWB) (e.g. Lai, Bond, & Hui, 2007). SWB includes the cognitive and emotional appraisal of one's quality of life (Diener, 1984), while Diener et al. (2009, 2010) later

developed a brief measure of well-being, which was named the Flourishing Scale, which aimed to capture an individual's sense of meaning and purpose, positive relations, engagement, contribution to others' well-being, competency, self-acceptance, optimism, and one's sense of being respected. Previous studies have suggested that some social axioms domains (e.g. social cynicism) may lower SWB whereas some (e.g. reward for application) may improve it (e.g. Hui & Bond, 2010). People with higher levels of social cynicism tend to report lower levels of life satisfaction (Hui & Bond, 2010); cynics' negative worldview tends to lead them to be less satisfied with specific domains of life (e.g. job satisfaction; Leung et al., 2010) and with general domains of life (Lai et al., 2007). Therefore, we hypothesised the following

Hypothesis 1. Lower levels of social cynicism would be associated with higher levels of flourishing.

The association between reward for application and SWB is found to be generally positive (e.g. Hui & Bond, 2010; Safdar, Lewis, & Daneshpour, 2006), although a longitudinal study found that it was not a significant predictor of life satisfaction (Lai et al., 2007). The association exists because people who believe in human agency tend to be more likely to believe in their own agency with respect to their experiences and their lives; thus, they tend to exert effort to accomplish their goals (Zhou, Leung, & Bond, 2009). Reward for application may also have a positive, indirect effect on SWB, via mediators such as active coping (Safdar et al., 2006), internal and external-family loci-of-hope (Bernardo & Nalipay, 2016), which are predictors of well-being (Chao, 2011; Du & King, 2013). Thus we hypothesised the following:

Hypothesis 2. A higher level of reward for application would be associated with greater levels of flourishing.

Findings are inconclusive regarding the relationship between social complexity and SWB. Whereas Safdar et al. (2006) reported a positive correlation between social complexity and life satisfaction among an Iranian sample, Lai et al. (2007), using a university sample in Hong Kong, found a negative correlation between social complexity and life satisfaction, and Hui and Bond (2010) found no significant association in another Hong Kong Chinese university student sample. Other studies have found social complexity to be positively associated with sense of mastery and self-transcendence (Bond, Leung, Au, Tong, & Chemonges-Nielson, 2004; Neto, 2006). Given the inconsistent findings from previous studies, this study did not have a specific hypothesis regarding the relationship between social complexity and flourishing. Similarly, no hypothesis was put forward for fate control, because previous studies reported a non-significant association between fate control and SWB (Hui & Bond, 2010; Lai et al.,

2007). This longitudinal research aimed to clarify any significant effect of social complexity and fate control on flourishing over time.

People who score higher on the social axiom dimension of religiosity tend to be more religious, as evidenced by behavioral indicators such as church attendance (Neto, 2006). Although the literature on SWB has shown religious people to be happier (Myers & Diener, 1995) with higher levels of well-being (Witter, Stock, Okun, & Haring, 1985), the social axiom dimension of religiosity, surprisingly, has not been shown to be associated with life satisfaction (Hui & Bond, 2010; Safdar et al., 2006). This study therefore had no specific hypothesis for the effects of religiosity on flourishing.

In this study, we examined the effects of social axioms assessed at the baseline survey (T1) on flourishing assessed at the second follow-up survey (T3), after controlling for baseline flourishing (T1). Given that Chinese university students are our target population in this study, we also investigated whether social axioms influence their sense of belonging and the potential mediating effects of school belonging assessed at the first follow-up survey (T2) on the relationships between baseline social axioms and flourishing assessed at the second follow-up survey (T3).

Social Axiom and School Belonging

School belonging was defined by Goodenow (1993) as "the extent to which students feel personally accepted, respected, included, and supported by others" (p. 80) in the school context. Previous studies have consistently found that such sense of connectedness to one's school is associated with students' adaptive and desirable outcomes, such as higher academic motivation (Gillen-O'Neel & Fuligni, 2013), academic performance (E.M. Anderman, 2002), and SWB (Jose, Ryan, & Pryor, 2012). Previous studies have also identified some psychological correlates of school belonging such as achievement motivation and self-efficacy (e.g. L.H. Anderman, 2003; Faircloth & Hamm, 2005). No published research has tested relations between social axioms and perceived school belonging, although social axioms are defined as general social beliefs about human beings and the world which influence not only interpersonal behaviors (Leung, Bond, & Schwartz, 1995; Singelis, Hubbard, Her, & An, 2003) but also psychological antecedents of these behaviors (e.g. outcome expectancies) across distinct contexts (Bond et al, 2004; Leung et al., 1995). Following these scholars' line of argument, we anticipate that social axioms are associated with an individual's perception of interpersonal relationships and guide social interactions, and hence influence his/her sense of belonging in the school setting. We therefore aimed to empirically investigate the relations between social axioms and perceived school belonging among Chinese university students. This investigation was exploratory in nature but hypotheses were developed based on relevant previous research.

People with social cynicism have reported a lower tendency toward collaboration and compromise in resolving conflicts (Bond et al., 2004). They also tend to have lower levels of interpersonal trust (Singelis et al., 2003). Given these attributes of lower trust and a greater tendency to engage in negative social behaviors, social cynicism may hinder individuals from building relatedness with others and their institutions. Therefore, we hypothesised the following:

Hypothesis 3. Social cynicism would be associated with lower levels of school belonging.

In contrast to social cynicism, social complexity has been found to be correlated with more compromise and collaboration in situations involving conflict (Bond et al., 2004). When people believe in the flexibility of society, they may be aware of multiple solutions to help manage conflicts with others. Such social beliefs may hence become a resource for students in dealing with interpersonal relations and help them to build a sense of belonging with respect to fellow students due to fewer negative encounters. Therefore, we hypothesised the following:

Hypothesis 4. Social complexity would be associated with higher school belonging.

People who believe in reward for application are more likely to participate in school activities (Zhou et al., 2009), and their school integration would therefore be enhanced. Reward for application is associated with a positive approach to interpersonal relations (Singelis et al., 2003) and thus facilitates the ability to develop and maintain friendships, which is a predictor of school belonging (Hamm & Faircloth, 2005). We hence hypothesised the following:

Hypothesis 5. Reward for application would be associated with higher school belonging.

There is very limited research on the effect of fate control and religiosity in the interpersonal context. The only exception reported that neither type of beliefs were significantly associated with conflict resolution strategies, except for more accommodation and competition (Bond et al., 2004). In contrast to reward for application, both fate control and religiosity (e.g. belief in the existence of a supreme being) can be understood as being related to external locus of control, in which people perceive that they lack control over events that occur in their lives. People who believe in fate as an element that determines the events in their lives are more likely to adopt avoidant coping (Bond et al., 2004). In a school setting, such an avoidant approach may hinder the development of school belonging, but further examination is warranted. We hence hypothesised the following:

Hypothesis 6. Fate control would be associated with a lower level of school belonging.

Hypothesis 7. Religiosity would be associated with a lower level of school belonging.

School belonging is believed to be a promoting factor of students' SWB because sense of belonging or relatedness is a basic human need (Baumeister & Leary, 1995; Ryan & Deci, 2000) and increases both one's perception and pursuit of life meaning (Deci & Ryan, 2000; Lambert et al., 2013). It has been argued that health and social relations are related and there is evidence suggesting that social isolation is a risk factor (e.g. Holt-Lunstad, Smith, & Layton, 2010; House, Landis, & Umberson, 1988). While social relations are proposed to buffer the effect of stress on health outcomes (e.g. Cohen & Wills, 1985), some researchers further argued that social integration may have a direct impact on health outcome (e.g. Cohen, 2004). Extending from this line of argument, the social cure literature demonstrated that social integration has positive effects on one's health and well-being (Haslam, O'Brien, Jetten, Vordemal, & Penna, 2005; Jetten, Haslam, & Haslam, 2012; Steffens, Jetten, Haslam, Cruwys, & Haslam, 2016). Students' membership and belonging to the school are therefore expected to facilitate the establishment of social capital (e.g. social support) and improve adaptive coping as well as well-being. Previous research has provided cross-sectional and longitudinal evidence for the positive correlation between school belonging and SWB among students (e.g. Jose et al., 2012; Oberle, Schonert-Reichl, & Zumbo, 2011; Tian, Zhang, Huebner, Zheng, & Liu, 2016). We, therefore, hypothesised the following:

Hypothesis 8. School belonging would be associated with higher levels of flourishing.

Considering that social axioms are potential antecedents of both school belonging and SWB and there is empirical evidence supporting the relation between school belonging and SWB, this study also aimed to explore any mediating effect of school belonging on the relationship between social axioms and flourishing among Chinese university students. We, therefore, tested the proposed partial mediation model, as shown in Figure 1, to further clarify the interplay of social axioms, school belonging, and flourishing.

METHODS

Participants and Procedures

Ethical approval was obtained from the affiliated university of the corresponding author. We conducted three questionnaire surveys in November to December of

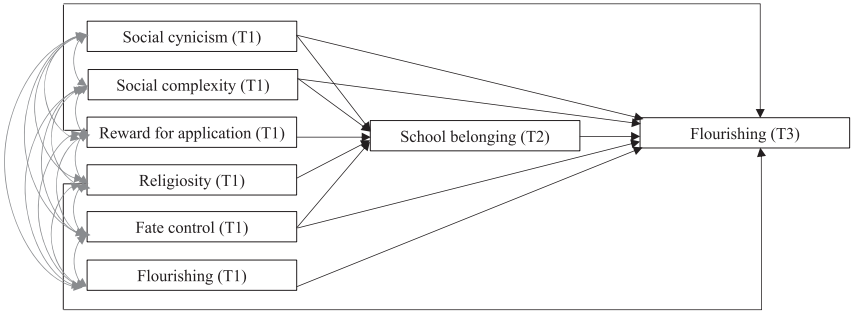

FIGURE 1. The proposed model for the hypothesised mediations.

2014 (T1), 2015 (T2), and 2016 (T3). We recruited a total of 286 (196 females) undergraduate students, both freshmen (n = 130) and sophomores (n = 156), from mainland China attending a public university in Macao, China, through the participant pool at T1. Mainland Chinese university students were recruited to keep the participants relatively homogeneous. Their ages ranged from 18 to 21 years (M_{age} = 18.90). From this sample, 244 students completed the survey at T2 and 195 took part in the survey at T3. A small amount of monetary compensation was offered to the participants after each survey, and they received supermarket coupons of MOP 450 (about USD 55) in total for taking part in all three surveys. In total, 195 students (27.7% male, M_{age} = 18.85) participated in all three waves, and their data were analyzed in the present study.

Students completed paper and pencil questionnaires in each survey. They also provided written consent for their participation in this study. Participants who completed the T1 survey were invited to join the T2 and T3 surveys by providing contact information on a separate contact sheet. Before each follow-up survey, they were contacted by phone and through email, informing them about the venue and time for the survey. To match their responses at the three measurement times, participants were asked to create a personal code consisting of their birthday (month and date), mother's family name, and birth order.

Measures

In the survey, participants reported their demographic information (gender, age, and grade), and responded to the following scales:

Social Axioms. A 60-item scale designed to measure social axioms (Leung et al., 2002) was used in all three surveys. It has been validated with a large number of samples from various cultures (Leung et al., 2002, 2012). The scale has five subscales: social cynicism, reward for application, social complexity, fate control, and religiosity. The reliability was tested with a Chinese sample in

Hong Kong in a previous study (Leung et al., 2002), and the Cronbach's aplas for these five subscales were .80, 78, .72, .70, and .81, respectively. Participants responded on a 5-point Likert scale from 1 (*strongly disbelieve*) to 5 (*strongly believe*). Higher mean scores indicated higher levels of the corresponding belief in the social axiom model.

School Belonging. The 18-item Psychological Sense of School Membership Scale (Cheung & Hui, 2003; Goodenow, 1993) was used to measure participants' sense of school belonging at T2. The scale has been used in previous studies for Chinese students, with Cronbach's alphas ranging from .82 to .85 (Tao, Long, & Wu, 2008; Zhang, Mou, Tong, & Wu, 2018). A sample item is, "People notice when I'm good at something." Participants responded on a 5-point Likert scale from 1 (*not at all true*) to 5 (*completely true*). A higher mean scale score represented a higher level of school belonging.

Flourishing. At T1 and T3, an eight-item scale was used to measure flourishing (Diener et al., 2010), and its psychometric properties have been shown to be satisfactory in a Chinese sample (Cronbach's alpha = .88; Tong & Wang, 2017). Participants responded to items on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Higher mean scale scores represented higher levels of SWB.

Statistical Analyses

For attrition analysis, we first examined differences between students who participated in all three surveys (n = 195) and those who did not (n = 91) in terms of their age, gender, social axioms, and level of flourishing assessed in T1. No significant differences were found between participants who finished all three surveys and those who participated in the baseline survey only on the assessed variables ($p > .05$). Chi-square test results showed that male students were more likely to drop out from the study than the female students were ($\chi^2(1) = 4.05$, $p = .04$). Independent t-tests were then conducted to determine whether there were gender differences on all psychological variables assessed at the three waves. The results showed no significant differences between male and female participants ($p > .05$). Hence gender was not controlled for in the subsequent analyses.

Because one participant did not respond to all items of the flourishing scale, the data of this case were excluded from the correlation analysis and the path analysis. Therefore, the final sample size was 194. Preliminary analyses consisted of chi-square tests, t-tests, and correlational analyses. These statistics were conducted with SPSS 24, whereas Amos 24 was used to conduct path analyses for testing the proposed mediation model. The modification indexes provided by Amos 24 were taken as reference information for model modification. The cut-

off criteria of model fit indexes proposed by Hu and Bentler (1999) were employed to assess the goodness-of-fit of models. Specifically, the cut-off value of CFI is .95 or higher, while the cut-off values for RMSEA and SRMR are .05 or smaller.

RESULTS

The Stability of Social Axioms across Three Waves

Cronbach's alphas and descriptive statistics for all study variables are reported in Table 1. The correlation analysis shows that the five social axiom variables at T1 had consistently moderate-to-high correlations with their corresponding constructs assessed at T2 and T3 (see Table 1). A path analysis was conducted to test whether social axioms were stable across time. In the path model, each social axiom was set to have direct paths to its corresponding construct in the subsequent waves. All social axiom variables and their measurement errors were allowed to correlate at each wave. The fit indices of the proposed model were satisfactory, $\chi^2(60) = 79.90$, $p = .04$, CFI = .98, RMSEA = .04 [.01, .06], SRMR = .05. All the path coefficients were also significant. The results supported the prediction that social axioms were stable over time (see Figure 2).

The Testing of the Proposed Partial Mediation Model

Path analyses were conducted to examine the proposed mediation effect of school belonging (T2) on the relationship between social axioms (T1) and flourishing (T3). We also controlled for the effect of flourishing (T1) on flourishing (T3) in the model, correlating flourishing (T1) with social axioms (T1) and flourishing (T3). The model fit was not satisfactory, $\chi^2(1) = 44.42$, $p < .001$, CFI = .86, RMSEA = .47 [.36, .60], SRMR = .07. We removed all non-significant correlations among exogenous variables (i.e. social axioms and flourishing assessed in T1) and paths. Those non-significant paths were from three social axioms (social complexity, fate control, and religiosity at T1) to school belonging (T2) and flourishing (T3). The goodness-of-fit of the modified model was improved but still not satisfactory, $\chi^2(13) = 52.72$, $p < .001$, CFI = .87, RMSEA = .13 [.09, .16], SRMR = .07. Based on the modification indices provided by Amos, a path from flourishing (T1) to school belonging (T2) was added in order to further improve the model fit, and the resultant model satisfactorily fit the data, $\chi^2(12) = 10.68$, $p = .56$, CFI = 1, RMSEA = .00 [.00, 07], SRMR = .03.

Results showed that H1, H2, H3, and H8 were supported. In the model (Figure 3), social cynicism (T1) was negatively associated with school belonging (T2), $\beta = -.15$, $p < .05$, which was positively associated with flourishing (T3),

TABLE 1
Descriptive Statistics, Internal Reliability, and Intercorrelation Matrix of Major Variables

	Time 1					*Time 2*						*Time 3*						
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*
Time 1																		
1. CY	1																	
2. SC	.05	1																
3. RA	.01	.50**	1															
4. RE	−.00	−.04	.12	1														
5. FC	.41**	−.03	.09	.18*	1													
6. FL	−.23**	.29**	.38**	.15*	−.02	1												
Time 2																		
7. CY	.64**	.10	−.05	−.01	.27**	−.19**	1											
8. SC	.05	.60**	.34**	−.08	−.05	.27**	.05	1										
9. RA	.03	.41**	.61**	.02	.09	.37**	.06	.53**	1									
10. RE	.04	.04	.05	.55**	.13	.16*	−.01	−.05	.02	1								
11. FC	.32**	−.01	−.03	.12	.52**	−.06	.37**	.04	.12	.29**	1							
12. SB	−.25**	.07	.24**	.06	.02	.52**	−.41**	.08	.29**	.16*	−.16*	1						
Time 3																		
13. CY	.63**	.10	−.03	.05	.33**	−.18*	.75**	.01	.00	.06	.31**	−.31**	1					
14. SC	.15*	.44**	.24**	.01	.04	.22**	.03	.57**	.39**	.09	.05	.13	.04	1				
15. RA	.11	.30**	.53**	.07	.12	.25**	.04	.38**	.64**	.00	.10	.18*	.02	.56**	1			
16. RE	−.00	−.07	.06	.56**	.16*	.12	−.08	−.10	.03	.58**	.22**	.08	−.02	.13	.16*	1		
17. FC	.24**	−.15*	−.02	.23**	.49**	.03	.26**	−.08	−.05	.26**	.60**	−.12	.34**	.06	.16*	.33**	1	
18. FL	−.27**	.13	.32**	.14	.04	.56**	−.25**	.21**	.35**	.12	.06	.51**	−.31**	.23**	.36**	.18*	.07	1
Mean	3.10	4.08	3.78	3.11	3.14	5.04	3.08	4.07	3.78	3.07	3.13	3.61	3.06	4.05	3.71	3.06	3.13	4.93

TABLE 1 *(CONTINUED)*

	Time 1					*Time 2*						*Time 3*						
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*
SD	.40	.35	.37	.50	.45	.92	.40	.34	.36	.44	.46	.43	.38	.35	.38	.45	.47	.92
Minimum	1.72	2.83	2.86	1.75	1.88	1.00	2.17	2.75	2.79	1.88	1.88	2.33	2.11	3.08	2.64	1.25	1.50	1.25
Maximum	4.44	5.00	4.93	4.75	4.88	7.00	4.33	4.92	5.00	4.50	4.88	4.89	3.94	5.00	4.79	4.50	4.88	7.00
Cronbach's α	.79	.76	.74	.72	.55	.93	.79	.77	.74	.66	.62	.84	.76	.79	.77	.67	.65	.93

Note: $N = 194$. $^{*}p < .05$; $^{**}p < .01$. CY = Social cynicism; SC = Social complexity; RA = Reward for application; RE = Religiosity; FC = Fate control; FL = Flourishing; SB = School belonging.

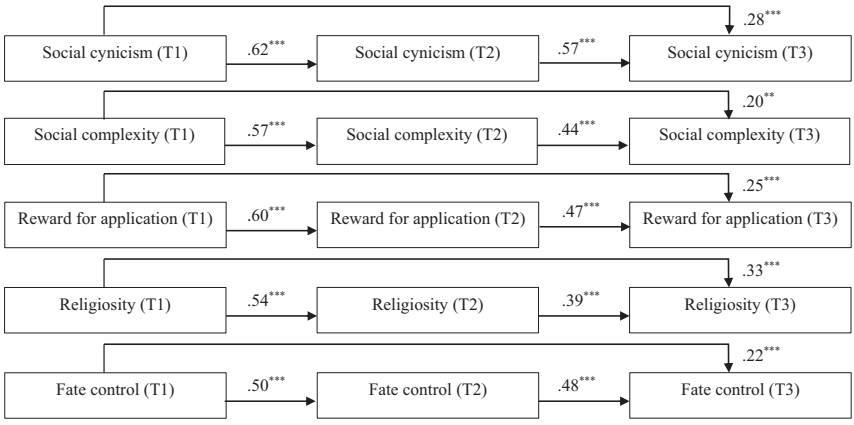

FIGURE 2. The model measuring stability of social axioms. Standardised coefficients are presented. $^{**}p < .01$; $^{***}p < .001$. All exogenous variables and residuals of social axioms at each wave were allowed to correlate in this path model (both paths and coefficients are not shown).

$\beta = .26$, $p < .001$. The standardised direct effect of social cynicism (T1) on flourishing (T3) was $-.12$ ($p < .05$). The standardised indirect effect of social cynicism (T1) on flourishing (T3) through school belonging (T2) was $-.04$ (95% CI [$-.089$, $-.007$]). Therefore, the influence of social cynicism (T1) on flourishing (T3) was partially mediated by school belonging (T2). The effect of reward for application (T1) on flourishing (T3) was direct ($\beta = .13$, $p < .05$), and its indirect effect via school belonging (T2) was non-significant ($\beta = .02$, 95% CI [$-.013$, 054]). The results also showed that reward for application, social complexity, fate control, and religiosity were not significantly associated with school belonging, and hence H4, H5, H6, and H7 were not supported.

DISCUSSION

This study is the first to use a multiple-wave longitudinal design to examine the stability of all five social axiom variables at the individual level. We demonstrated that all social axioms remained moderately stable over two years at the individual level among Chinese university students in Macao. This finding provided additional evidence to the literature regarding the moderate stability of such general beliefs about social contexts and human nature. Moreover, this study is also the first to explore the prospective relationship between social axioms and school belonging and to test the potential mediating effect of the latter on the relationship between social axioms and flourishing among university students. Our results showed that both social cynicism and reward for application

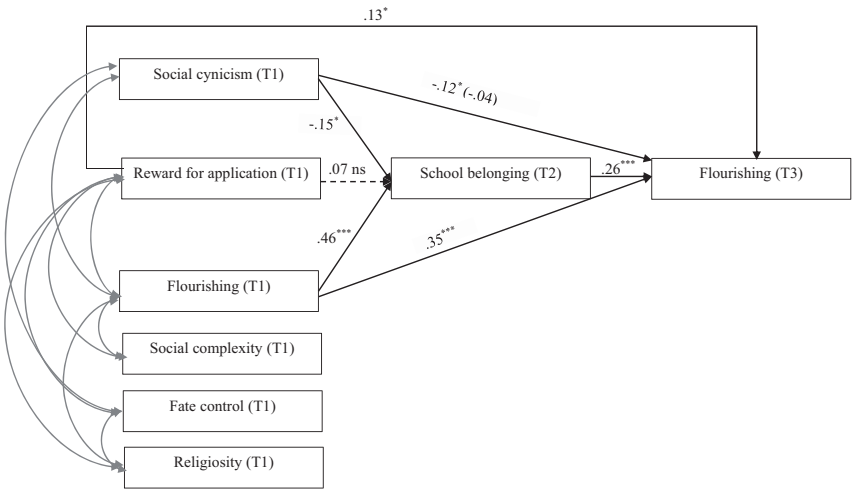

FIGURE 3. The mediating effects of school belonging (T2) on the relationship between social axioms (T1) and flourishing (T3) after controlling for flourishing (T1). Standardised path coefficients are presented. Standardised indirect effect is listed in parentheses. The dashed line represents non-significant path. The significant correlations among exogenous variables are shown without coefficients listed. *$p < .05$; ***$p < .001$.

were significant predictors of flourishing, and the effect of social cynicism on flourishing was partially mediated by school belonging.

Our hypothesis regarding reward for application was supported, and we found that it predicted a higher level of flourishing. Consistent with past findings, when people believe that the efforts they make will pay off and perceive that they have control over their lives, they become more agentic in pursuing goals (Brandtstädter & Renner, 1990) and people who believe in their own agency tend to make adjustments, cope well, and are more hopeful (Bernardo, 2013; Safdar et al., 2006; Zhou et al., 2009). Taken together, we expected that people who scored high on reward for application (i.e. those who believed in effort, knowledge, and careful plans) may be better at setting goals and are good at making adjustments despite adversity, which lead to a happy and flourishing life. Future longitudinal studies may further examine these proposed psychological underlying mechanisms (e.g. goal setting and planning as a potential mediator).

The significant effect of social cynicism on flourishing was consistent with the results of previous studies (Hui & Bond, 2010; Lai et al., 2007). People who scored high on social cynicism held a negative view of human nature and considered that life produced unhappiness (Bond et al., 2004). Our findings showed that people holding a negative view of human nature and life are also less likely to fulfill domains of flourishing such as competence and relatedness. Based on

self-determination theory (Deci & Ryan, 2000), we may also expect those high in social cynicism to be associated with poorer motivation and well-being but this speculation is subject to further empirical testing. Interventions may consider cognitive strategies related to reconstructing positive worldviews for the promotion of SWB or to devise interventions that will fulfill basic needs such as relatedness, which also echos our findings relating school belonging and flourising. For example, the behavior of authorities, such as leaders, can reduce people's cynical attitudes toward organisational change (Bommer, Rich, & Rubin, 2005). Similarly, interventions may also be developed to improve one's automony needs by enhancing their sense of control (e.g. Duckworth, 1983; Nunn, 1995; Walden & Ramey, 1983).

The effectiveness of interventions varies across individuals and social groups, and some of the variation may be attributed to relatively stable traits, including social axioms. Since there are both cultural and individual differences in people's endorsement of different social axioms, one should note those differences when designing and preparing for an effective intervention to promote flourishing among students. For instance, for those who believe in effort (i.e. higher score on reward for application), training of goal setting and adjustment may be more likely to be helpful than for those who do not believe in it. Hence, for an appropriate and cost-effective approach to promote students' flourishing, a deeper understanding of cultural and individual differences in social axioms may be helpful.

On the other hand, we did not find any significant effect for social complexity, religiosity, and fate control on flourishing. Previous findings on their associations with SWB have not been conclusive, and thus our findings added longitudinal evidence that these three social axioms do not have prospective influence on flourishing, which is an indicator of SWB. Nevertheless, the reason for inconsistent results among studies into the effect of these three social axioms on well-being is not known. It may be related to some variables that are not considered in all these studies. For example, we speculate that age may have been a variable that influenced the non-significant effects of religiosity on flourishing. This is due to the association between religiosity and well-being being stronger in older adults and those engaged in religious activities than their younger and non-engaged counterparts (Witter et al., 1985). Since the effect of religiosity on SWB may be complex and vary with sample characteristics, future studies should further examine the prospective effects of social axioms across age and religious groups. With regard to fate control and social complexity, there is a lack of research on the effects of these two social axioms on either flourishing or SWB. From past studies on a related concept locus of control and well-being, there was evidence suggesting that believing in external control may be a protective factor against adverse life events (e.g. loss of one's spouse) that are, in fact, uncontrollable (Specht, Egloff, & Schmukle, 2011). Hence, we speculate that the nature of the adverse or positive life events that will influence the effect of fate control on

SWB may be highly situation-specific, which leads to inconsistent results across studies. Similarly, Bond et al. (2004) showed that social complexity is related to a problem-solving coping style, but whether or not this coping style will improve SWB may depend on the situation. Again, the relation between social complexity and SWB may be situation-specific. Further research is warranted to test this speculation.

The current study contributes to the literature by examining the relationships between individuals' cognitive beliefs about the world and their perceived sense of school belonging. Our findings showed students' social cynicism dampened their perceived sense of belonging in school. This suggested that students with cynical beliefs might devalue affiliations and relationships with their group members, which result in their feeling of alienation in a university setting. This study is the first study on the effect of social axioms on school belonging, and further research must be conducted to test the replicability of the result of our exploratory study in other age groups and school settings. Furthermore, our findings demonstrated that social cynicism had not only direct but also an indirect effects on flourishing (via a decreasing sense of school belonging). They suggest that assessing social cynicism may facilitate early identification of students with school adjustment and/or well-being concerns by school staff. Those students who are socially cynical or socially excluded may also be encouraged to take part in school belonging-based interventions (e.g. by promoting satisfactory contact with peers and/or instructors via extracurricular activities; Allen, Kern, Vella-Brodrick, Hattie, & Waters, 2018; Waters, Cross, & Runions, 2009) for promoting their sense of belonging and flourishing.

It is worth noting that this study found that flourishing (T1) was associated with school belonging (T2) while school belonging (T2) was also associated with flourishing (T3). The former association suggests that flourishing may increase one's school belonging. Such a finding was unexpected but plausible, particularly if there is a reciprocal relationship between school belonging and flourishing. Some longitudinal studies showed that indicators of subjective well-being, such as school satisfaction and positive emotions, promoted a relationship with teachers and peers (Stiglbauer, Gnambs, Gamsjäger, & Batinic, 2013), satisfaction of relatedness need (Su, Tian, & Huebner, 2019), and school connectedness (Jose et al., 2012). Since this study did not hypothesise a reciprocal relation and assessed school belonging only at T2, it did not allow testing a cross-lagged panel model which involves the reciprocal paths between school belonging and flourishing across time points. Future studies are warranted to examine the causal/reciprocal relationship between flourishing and school belonging. Since the level of school belonging of our participants at T1 was not controlled for in our mediation model, the variances on school belonging (T2) could be a result of variables measured at T1 and it could also reflect the level of school belonging (T1). Furthermore, although we did not have any experimental manipulation between T1 and T3, one should be cautious that we controlled flourishing (T3)

by flourishing (T1) only, and substantial changes in flourishing, if any, between the time lag (e.g. T2) could have an impact on our conclusion.

One should also be cautious that our sample is a non-probability one and hence the results may not be able to generalise to all Chinese students. Also, based on our attrition analysis, more male participants dropped out from the study than their female counterparts. This higher attrition in males than females was also reported in previous longitudinal studies (e.g. Burkam & Lee, 1998; Luyckx, Soenens, Goossens, & Vansteenkiste, 2007). Although our findings may be vulnerable to potential gender bias, the independent *t*-test results showed no gender differences with regard to social axioms, school belonging, and flourishing ($p > .05$). Given the relatively few male cases ($n = 53$) in the final sample size, the path analysis with multi-sample comparison for testing the moderating effect of gender was not conducted, and this is considered to be a limitation of this study. Moreover, the use of self-report data of our three major variables may also leave the study vulnerable to biases. The relatively low reliability of the fate control subscale across time (i.e. Cronbach's alpha < .70) is another limitation. Considering that the Cronbach's alpha of this subscale also varied in previous studies (e.g. Hui & Bond, 2010; Lai et al., 2007), future studies on social axioms should re-examine the subscale items to see if its reliability can be improved.

CONCLUSION

Despite these limitations, the present study is the first to assess the relations among social axioms, school belonging, and flourishing, and provides insights for further study in the area. Its findings not only support the temporal stability of the five dimensions of social axioms, but they also help educators to understand that university students' SWB may vary as a function of their beliefs about the world, as well as their perceived school context. Students' perceived sense of school belonging and SWB can be undermined by their general social beliefs, namely cynicism. School professionals need to pay close attention to students' salient beliefs about the world and life and incorporate them into interventions to improve their sense of belonging and SWB.

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DECLARATION

The authors declare no conflict of interests.

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