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Person-environment fit: Does it matter for tourism students' career outcomes in an era of crisis?

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ABSTRACT

This study aims to examine the relationship of personal interest (P), the environment (E) (i.e., pandemic, social unrest, international disputes) and P-E fit, with the five selected career-related outcomes (i.e., intent to join tourism industry, lifelong commitment, leadership self-efficacy, resilience, and anxiety). Structural equation modelling was used to analyse 380 data from tourism students in Hong Kong higher education institutions. The results show that P strongly predict Intent, Lifelong, Leadership self-efficacy, and Resilience, while E strongly predicted Anxiety. Tourism educators and employers should facilitate a healthy match of P and E to attract new employees to the industry.

1. Introduction

For a worker's productivity, professional development, and wellbeing, personal attributes and the environmental context of the workplace are deemed to be influential factors from various theoretical perspectives. Person-environment fit (P-E fit) theory (Lewin, 1935, 1951), for example, emphasises the importance of a match between one's personal attributes (P) and one's work environment (E). Accordingly, it is essentially the interaction of P and E (i.e., positive personal attributes coupled with a desirable environment) that contributes to desirable career outcomes. In contrast, although acknowledging the importance of both P and E, a differential predictions perspective emphasises the different contributions of P and E to different outcomes (e.g., Choy & Yeung, 2022; Parker et al., 2018; Rocconi et al., 2020). For higher education students studying tourism in Hong Kong, which has suffered from the impact of multiple threatening events such as the COVID-19 pandemic, social unrests, and international disputes and warfare, how the P and E factors may influence their career choice, development, and personal wellbeing is a significant research problem that needs an answer for the tourism industry to revive and for the new employees to thrive. In this paper, we attempt to test whether P and E separately, or combined, predict a range of career outcomes. This work contributes to existing knowledge of P-E fit paradigm in predicting individuals' vocational choice. The findings would also give higher education institutions and tourism employers insights to provide the best support for students' needs in P and E to thrive in a tourism career.

1.1. P-E fit

In the prediction of career choices and outcomes, P-E fit theory (Lewin, 1935, 1951) has provided evidence showing the importance

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of a match between P and E to contribute to an employee's productivity, motivation, and personal wellbeing (e.g., Rothmann et al., 2019; Suleman et al., 2018). According to P-E fit theory, vocational behaviour is essentially determined by the interaction of one's personal attributes (P) and significant aspects of the work environment (E). An adequate fit between a worker's personal attributes and the work environment influences the worker's vocational choice, performance, and wellbeing. For instance, one's stress and anxiety may be caused by a combination of one's personality and the challenging work environment in which the worker is situated. The joint forces of P and E emphasised by P-E fit theory are widely used to explain vocational outcomes. In tourism, for example, a fit between tour members and the tour leader on a group package tour (Chang et al., 2020), or a fit between employee personality in hospitality and the hotel branding as well as the applicants' customer orientation trait (Doan et al., 2021; Lin et al., 2018) are known to contribute to favourable outcomes.

1.2. Differential predictions

Unlike P-E fit theory, a differential predictions hypothesis sees the distinct functions of P and E, which contribute to different outcomes in specific ways (Choy & Yeung, 2022; Parker et al., 2018; Rocconi et al., 2020). Like P-E fit theory which highlights the agency of an individual's self-perceptions, self-concept theory also sees the significance of one's self-perceptions in driving one's behaviour and decision making. One's self-concept can be described in terms of cognitive and affective dimensions (Arens et al., 2011). Evidence suggests that affective self-concept (i.e., liking of a tourism career in this case) is a stronger driver of academic and vocational choices (e.g., intent to join the industry; lifelong service in the industry) than other predictors (e.g., mastery motivation; cognitive sense of competence) (Choy & Yeung, 2022; Yeung & McInerney, 2005). Hence, there is an increasing number of studies examining how one's vocational interest (affect) influences one's career choice, rather than examining cognitive dimensions (Atitsogbe et al., 2018; Hoff et al., 2022; Sasson, 2021).

1.3. P-E fit vs. differential predictions hypotheses

While the differential predictions hypothesis seems to stand for a variety of academic or career outcomes (Choy & Yeung, 2022; Yeung & McInerney, 2005), P-E fit predictions seem also to be well evidenced. The question is whether the P-E fit in a vocational education context would add value to the differential predictions of P and E for various career-related outcomes. In other words, while P and E predict different outcomes that are essential for the individual workers' and the organisation's success (Autin et al., 2020; Giousmpasoglou et al., 2021; Yeung & McInerney, 2005), it is unclear whether the interaction of P and E adds value to the predictions of the valuable outcomes.

1.4. Career-related outcomes

In this study, we have chosen three valuable career outcome variables (Intent (to join a tourism career), Lifelong (willingness to take tourism career as a life-time career), Leadership self-efficacy (individuals' confidence in their leadership abilities), and two personal attributes related to a career in tourism (Resilience (recover from adversity in tourism), and Anxiety (when things in a tourism job do not work out as expected) with justifications provided below. We examined whether the combined effect of P and E factors will have additional contribution to these vocational outcomes on top of either the P or E factor as a separate predictor.

Intent. Career aspirations can be immediate or long-term. Immediate aspiration is the intent to join the career right after training (Yeung et al., 2011; Yeung & McInerney, 2005). Research shows that a student's intent to join a career is influenced by both intrinsic factors (e.g., interest and expectation) (Atitsogbe et al., 2018; Choy & Yeung, 2022) and extrinsic factors (e.g., job nature, remuneration, and career prospect) (Choy et al., 2021; Jackson & Tomlinson, 2020). Extrinsic factors may be complicated by social and cultural contexts. For example, studies have shown that tourism students in the Philippines (Benaraba et al., 2022) and Chinese (Birtch et al., 2021) doubt their career prospects, which negatively affects their intention to join the industry. The COVID-19 pandemic has further augmented the unfavourable job nature and vulnerability of employment in tourism, and demotivated students from joining the industry and previous tourism workers from re-joining it (Baum et al., 2020). Despite the attempts of scholars to identify the determinants of career intention, important factors appear to vary across studies (Kim et al., 2016; McGinley et al., 2020). However, in any case, career intent is ultimately of the greatest concern for tourism educators and policy makers. Given the evidence of the role of person (P) and environment (E) factors in career decision and behaviour, there is surprisingly little attention given to examine how P and E may influence students' career intention in Hong Kong during the recent years of multiple crises, hence the rationale of this study.

Lifelong. Apart from initial intent to join the industry, continual and life-long career commitment of staff is a crucial tourism education outcome for the sustainable development of a tourism organisation and the staff working in it. For an employee to choose tourism as a life-long career, the considerations inevitably include occupational interest, industry prospects, education opportunities and societal factors to determine whether it is worth the effort (Choy & Kamoche, 2021). Among a range of potential determinants of choice, one's interest in a particular study or a particular job stands out to have long-term effects on engagement (Kadir et al., 2017). For some students, tourism may in fact be considered as a stepping stone to employment. After launching their career in tourism, only a small percentage of them may end up choosing it as a lifelong career (Atef & Al Balushi, 2017). This makes the development of the industry difficult and unsustainable. Hence it is essential to understand the factors that facilitate students' lifelong commitment to the career.

Leadership self-efficacy. In this study, we define leadership self-efficacy as an individual's subjective rating of their suitability for a

leadership position or taking up a leadership task (Schyns & Sczesny, 2010). Self-efficacy is primarily one's cognitive assessment of one's competence in leadership. The success of a tourism organisation depends on effective leadership, especially in situations that require effective handling of crisis situations (Giousmpasoglou et al., 2021). That is why organisations need to make continual efforts to identify, inspire and nurture leaders. That is also the reason for tourism education to emphasise leadership training in the curriculum and during practical experiences in leadership roles during coursework and internship. Research has shown that one's vocational interest positively correlates with one's willingness to take on a leader's role and their self-efficacy as a leader (Bergner et al., 2019; Chan et al., 2000). To facilitate leadership, a range of personal factors may be essential. Bergner (2020) suggests that the essential personal factors include personality traits, vocational interest and cognitive ability which predict leadership and workplace success. During turbulent times, in order to swiftly and effectively respond to changes in the macro business environments, some researchers have highlighted the importance of embracing new leadership competencies (Dirani et al., 2020; Giousmpasoglou et al., 2021). By analyzing tourism students' self-assessment of leadership effectiveness, education providers could provide better career guidance and counselling to students (Schyns & Sczesny, 2010). However, whether the personal (P) factor is sufficient to bring gains in leadership self-efficacy with an unfavourable E factor is yet to be explored.

Resilience. One of the outcomes of quality education is the graduates' wellbeing, which includes not only positive emotions (Seligman, 2011) such as feeling happy, but also positive functioning (Dillon et al., 2020; Huppert & So, 2013). Resilience is an important competence outcome of vocational education because during challenging times, one's resilience is vital for one to remain happy and be 'buoyant' when faced with hardships and mishaps (Martin & Marsh, 2008). One is said to be resilient if one has the capability of bouncing back and flourish despite distressing situations (Pennington et al., 2018). Resilience may be reinforced by internal (e.g., self-attributes) and external determinants (e.g., the environment or context) (Bullough & Renko, 2013; Leadbeater et al., 2005). For tourism education providers and employers, it is essential to have a better understanding of the link between resilience and its internal and external drivers to maintain a sustainable tourism industry (Choy & Yeung, 2022).

Anxiety. Anxiety can be caused by many reasons including career shock and unfavourable employment conditions that are unexpected and perceived to be out of control (Akkeremans et al., 2020). Anxiety is a particularly significant variable during a crisis such as COVID-19, which has an adverse psychological effect on tourism employees' mental health, lowering their intention to stay with the industry (e.g., Khawaja et al., 2021). An elevation of anxiety due to the detrimental effects of the pandemic on the labour market has reduced not only job satisfaction, but also organisational commitment among all hotel industry workers, from frontline to management (Wong et al., 2021). Heightened anxiety has dire consequences. In a Spanish study conducted during COVID-19, Aguiar-Quintana et al. (2021) demonstrated a significant correlation between hotel employees' job insecurity and anxiety. In Hong Kong, the series of unwelcomed events occurring one after the other (social unrest on top of the pandemic and Sino-U.S. trade war) lends uncertainty to Hong Kong's economic outlook and sounds the alarm of job vulnerability of the tourism industry. Hence, an unfavourable E factor may trigger anxiety among tourism students in Hong Kong, subsequently generating serious wellbeing issues in the industry.

1.5. P and E factors

P (personal interest). One's intrinsic motivation in a specific discipline is a strong driving force for one to engage and thrive in it (Kadir & Yeung, 2017). Vocational interest is important because interest and satisfaction in a challenging job are motivators that may counter structural barriers in the industry (e.g., low pay, anti-social working hours, and vulnerability to external environments) that may prevent an individual from joining the workforce or staying within it (Choy & Kamoche, 2021; Su, 2020). Hence, we would expect students who find strong interest in a tourism program to have a stronger intent to join the industry and to stay there for a long time.

E (a threatening environment). Numerous factors may negatively affect one's career aspiration and career outcomes. Some of such barriers to career outcomes may be unanticipated and uncontrollable, the recent outbreak of the pandemic situation is one of such barriers. Other barriers include social unrest, violence, war, international disputes, political instability, economic crisis and natural disaster, etc. In Hong Kong, the social unrest that started from 2019 (Shek, 2020), followed by COVID-19 in 2020, has left Hong Kong 'living in uncertainty' (Jung et al., 2021, p. 107). While the pandemic has led to drastic global changes in employment, career development, and workers' mental health (Autin et al., 2020), studies have reported mixed views and career intentions in tourism. While career intention among Indian and Ecuadorian tourism students have remained positive in face of COVID-19 (Shad et al., 2020; Zurita & Soler, 2021), New Zealanders tend to temporary halt their short- and medium-term career plans but remain optimistic in the long-run (Reichenberger & Raymond, 2021). Exploring the driving forces for career decisions in tourism, a study in China found that during COVID-19, tourism students' future career intention was linked to negative emotions, but moderated by self-efficacy, intrinsic and extrinsic factors, and the students' passion for the industry (Birtch et al., 2021). For Hong Kong, which is a special administrative region of China, no study has scrutinised the impact of a threatening work environment on the career choice of tourism students. As tourism is one of the key pillars of Hong Kong's economy (Census and Statistics Department, 2021a), it is essential to understand the role of P and E for tourism students' career plans and outcomes. In fact, for Hong Kong, any international affair could have a sizeable impact on the lives of the people living there. The South China Sea dispute (Regilme Jr, 2018), and the ongoing trade war between the USA and China which has impacted global economy (Boylan et al., 2021), have already affected Hong Kong, being part of China. Hence the present study juxtaposing the P and E factors as predictors of career outcomes has the potential to guide the development of practical means to enable new Hong Kong tourism recruits to survive and thrive in the era of crisis.

1.6. The present investigation

The main goal of the current study is to examine the relationship of the P and E factors, and P-E fit, with the five selected tourism

career outcomes and personal attributes (i.e., intent to join tourism industry, lifelong commitment, leadership self-efficacy, resilience, and anxiety). We seek to determine whether P and E distinctly, or jointly, predict the five vocational outcomes. Specifically, we attempt to answer two research questions (RQs).

RQ1. Do positive P and negative E factors distinctly predict five vocational outcomes and personal attributes (Intent, Lifelong, Leadership self-efficacy, Resilience, and Anxiety)?

Rationale: Distinct predictions of P and E will support a differential predictions hypothesis.

RQ2. Does P-E fit (i.e., positive P \times positive E) add value to the predictions in addition to the discrete predictions of P and E on the five vocational outcomes and personal attributes?

Rationale: A significant predictive path from P-E fit to an outcome will support a P-E fit prediction of that specific outcome.

2. Methods

2.1. Participants

Students from vocational and professional education and training (VPET) institutions in Hong Kong were invited to participate in the study. In Hong Kong, VPET covers “programs up to degree level with a high percentage of curriculum consisting of specialised contents in vocational skills or professional knowledge” (Education Bureau, 2022). The sample of students from the tourism discipline is particularly relevant to the study at the time of multiple challenges and hardships in the discipline for which the years from 2020 is not only an ‘era of challenge and change’ as Floyd (2021, p.1) puts it, but an era of crisis. COVID-19 has caused job losses in numerous industries worldwide, with tourism being one of the most devastated (Business Standard, 2021), in contrast to continual manpower shortage prior to the pandemic outbreak (Vocational Training Council, 2018). In fact, the pandemic was only part of it. Hong Kong has suffered from the triple whammy of social unrest, damage from the Sino-U.S. trade war, and then the pandemic (Malone, 2020). Skyrocketing unemployment in tourism-related industries (10.6%) reached a 15-year high (Census and Statistics Department, 2021b). Uncertain industry outlook has been disrupting school leavers’ intention of studying in this discipline and joining the industry after graduation (Birtch et al., 2021). There has been an immediate decline in enrolment in tourism-related courses at VPET (Xu et al., 2022), sowing the seeds of an upcoming crisis of impeded tourism revival. To cope with the anticipated challenges of manpower shortage in a post COVID-19 era, aspirational and lived values such as wellbeing and leadership (Edelheim, 2020; Lei et al., 2021) need to be recognized by tourism institutes and stakeholders along with talent acquisition and retention (Choy & Kamoche, 2021; Choy & Yeung, 2022). The current challenges call for a search for empirically tested theory and practice that may enable informed directions for VPET and the industry to revive and thrive in face of one of the most difficult times in history.

All students studying tourism in VPET at certificate, sub-degree (i.e., Higher Diploma or Associate Degree) and undergraduate degree levels (Education Bureau, 2022) were invited to complete an online bilingual (English-Chinese) survey (paper copies were provided instead if requested) in 2021 when Hong Kong’s economy was hit by months of social unrest, followed by COVID-19, together with the continuing Sino-U.S. tensions. A total of 380 completed surveys were collected for analysis. The sample was made up of 72% females and 28% males. While students’ age was from under 20 to over 50, the majority of respondents were aged between 20 and 29 (52%), followed by those who were under 20 (47%). Of the respondents, 70% were undertaking hospitality-orientated programs (i.e., hotel, food and beverages) and the rest were from tourism-oriented program (e.g., theme park, cruise and aviation, etc.). Students from sub-degree levels have the highest number of respondents (41%), followed by undergraduate degree (38%) and certificate (21%).

2.2. Materials and procedure

A self-administered survey was developed after reviewing relevant measurement scales from the existing literature. Subsequently, we consulted two professors to ensure content validity and modified the survey questions to suit the purpose of the study. With university ethics approval and participant consent, the survey was pilot tested before the actual study. In this paper, we conceptualised vocational education students’ interest in a tourism-related career as the P factor. Considering the recent consecutive occurrences of multiple crises in Hong Kong, we developed a measure of threatening extraneous events as a negative workplace E. The survey comprised of 21 items (See Appendix): P (personal interest), E (a threatening vocational environment related to tourism – fear of pandemic, social unrest, international disputes), and short- and long-term outcomes and personal attributes (Career intention; Lifelong career choice; Leadership self-efficacy, Resilience, and Anxiety). All survey items were measured by a 6-point Likert type scale ranging from 1 (Disagree strongly) to 6 (Agree strongly). Person (P) was adapted from Yeung et al. (2012) to measure students’ interest in the tourism discipline. Environment (E) included three facets – the fear of infectious diseases, international disputes, and social unrest and violence that can damage the economy. Three items to measure career intention were adapted from Yeung and McInerney (2005) and Yeung et al. (2011) with two adjustments: (1) the items were directly relevant to tourism, and (2) the items referred to choosing to enter the workforce as a fresh staff member. Lifelong choice of a tourism career was also adapted from Yeung and McInerney (2005) and Yeung et al. (2011). Three items were used to refer to working in the industry as long as possible. Adapted from Tsai et al. (2006), three items were used to measure students’ self-conception in leadership effectiveness. The scale to access students’ anxiety was adapted from Martin (2001, 2009) with modification to align with the context of the study. Student resilience was measured through

three items adapted from [Martin and Marsh \(2008\)](#) to reflect their ability to bounce back when faced with challenges and upsets. We included questions which are similar but worded differently in the questionnaires for data triangulation and detection of careless responses ([Gogami et al., 2021](#)). The survey also collected respondents' demographic data (i.e., gender, age, program level, and major program).

To enable easy interpretation of P-E fit and its impact on vocational outcomes, we generated a P-E fit measure by juxtaposing P and E and created a positive P-E fit construct. Because E in the survey was a negative construct representing unfavourable circumstances in the industry, we first reverse coded the scores for E to make it a positive measure representing favourable workplace circumstances. The P-E fit construct was an interaction term ($P \times E$) which represents a combination of positive P and positive E (i.e., favourable personal attribute coupled with positive vocational environment). However, because the P-E fit construct is dependent upon the P and E constructs, modelling using the P, E, and P-E fit measures altogether are unlikely to be properly identified. Hence, we used standardised scores of P and E to generate the P-E fit measure (i.e., $P-E \text{ Fit} = zP \times zE$; see Appendix).

2.3. Data analysis

Preliminary analysis included descriptive statistics and reliability analysis (Cronbach's alpha). A series of confirmatory factor analyses (CFA) and structural equation models (SEM) were conducted using the statistical package of Mplus (Version 7.11) ([Muthén & Muthén, 2013](#)). We first tested the factor structure of the hypothesised three predictors (P, E, and P-E fit) with each of the five vocational outcomes and personal attributes (Intent, Lifelong, Leadership self-efficacy, Resilience, and Anxiety) respectively in five CFA models (Models 1 to 5). When each of the five models provided a reasonable model fit, we examined the paths from the three predictors to each vocational outcome in respective SEM models. As the model fit would be identical to each respective CFA model, we report only the model fit for CFA models to avoid redundancy. Finally, we tested Model 6, which included all the variables in Models 1 to 5 (See [Table 1](#)).

Model fit was assessed by multiple indices: Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), and comparative fit index (CFI). The chi-square test statistics were also reported. In general, for TLI and CFI, values equal to or larger than 0.90 are considered acceptable ([Byrne, 2012](#)). For RMSEA, values ranging between 0.05 and 0.08 are generally accepted as a close fit to a fair fit ([Bowen & Guo, 2012](#)). Factor loadings and latent factor correlations were then examined to provide further support for the structural validity of the tested model. Factor loadings show the relations of each underlying construct with each of the observed variables (i.e., the survey items). The latent factor correlations show the associations of the latent constructs, which should be clearly smaller than 1 so as to be distinguishable from each other.

The models would enable us to answer the RQs. By examining the paths from P and E to each outcome variable, we would be able to answer RQ1: 'Do P and E distinctly predict the vocational outcomes and personal attributes?' By examining the path from P-E fit to each outcome, we would be able to answer RQ2: 'Does P-E fit add value to the predictions?'

3. Results

3.1. Descriptive statistics and reliabilities

The means, standard deviations, and reliabilities of the constructs are presented in Appendix. The Cronbach's alphas (ranging between .61 and .90 across eight constructs) suggest a reasonable internal consistency for each factor. Extant studies measuring affective constructs (e.g., attitude and anxiety) have accepted a wider range of alpha values from 0.45 to 0.98, which support that the scales are fit for the purpose ([Taber, 2018](#)). The highest means were observed in the Environment ($M = 4.31$) and Person ($M = 4.24$) constructs, well above the mid-point of a 1–6 scale. The high mean scores imply that the current sample of students had high personal interest (P) but also perceived high fear of extraneous barriers due to unexpected and uncontrollable events in the vocational environment (E).

3.2. CFA

A series of CFA models were tested (see [Table 1](#)). Model 1 to Model 5, testing a 5-factor model (3 predictors and 1 outcome), each showed an acceptable fit supporting the hypothesised predictors and outcome structure (weakest CFI = 0.956, weakest TLI = 0.939, weakest RMSEA = 0.067; all acceptable).

Table 1

Models.

N = 380, Person(P), Environment(E), P-E Fit with Dependent Variable		χ^2	df	CFI	TLI	RMSEA
Model 1	Intent	130.957	48	.962	.947	.067
Model 2	Lifelong	113.338	48	.969	.957	.060
Model 3	Leadership self-efficacy	94.503	48	.975	.966	.050
Model 4	Resilience	119.664	48	.956	.939	.063
Model 5	Anxiety	110.543	48	.962	.948	.059
Model 6	5 outcomes	564.133	224	.921	.903	.063

The factor loadings for each of the seven variables are summarised in Table 2. All the factor loadings were statistically significant (ranging from 0.47 to 0.92). The latent factor correlations were all clearly smaller than 1, indicating that they were clearly differentiable from each other. The P-E fit measure, operationalised as the standardised interaction between P and a positively coded E, had small correlations with P ($r = -.14$) and E ($r = 0.10$), respectively (Table 2). These low correlations among the predictors have avoided difficulties in interpreting the effects of P-E fit. Interestingly, between P and E, the correlation was significantly positive ($r = .22$), showing that E, which was presumably a negative and devastating force, did not seem to be in direct conflict with personal interest.

3.3. SEM

The SEM fit indices were identical to the CFA solutions (Table 1) and are therefore not replicated in the report on SEM results. The paths from the three predictors to each tested vocational outcome are presented in Fig. 1. Model 1, SEM with paths from three predictors to Intent, found that the path from P was significantly positive ($\beta = 0.61$) whereas the path from E was small and not statistically significant ($\beta = -0.09$). The path from P-E fit to Intent was significantly positive ($\beta = 0.13$), indicating that a match between P and E would have a significant impact on the intent to join the tourism industry (Fig. 1).

Model 2, SEM with paths from three predictors to Lifelong, found that the path from P was significantly positive ($\beta = 0.52$) and the positive path from E was also statistically significant ($\beta = 0.17$). The path from P-E fit to Lifelong was small and not statistically significant ($\beta = .06$), indicating that a match between P and E would have almost no impact on the lifelong commitment to tourism (Fig. 1).

Model 3, with paths from three predictors to Leadership self-efficacy, found the path from P significantly positive ($\beta = .61$) but the path from E ($\beta = 0.01$) and from P-E fit ($\beta = -0.03$) to Leadership self-efficacy was small and not statistically significant, indicating that P was the only prevalent predictor whereas P-E fit had no additional impact (Fig. 1).

Model 4 with paths from three predictors to Resilience found that the path from P was statistically significant ($\beta = 0.62$). The path from E ($\beta = 0.13$) and P-E fit ($\beta = 0.02$) were not statistically significant, indicating that P was the only prevalent predictor whereas P-E fit had no additional impact (Fig. 1).

Model 5 with paths from three predictors to Anxiety found that the path from P was not statistically significant ($\beta = -0.05$). The path from E ($\beta = 0.82$) was positive and statistically significant. The path from P-E fit ($\beta = 0.09$) to Anxiety was not statistically significant, indicating that E was the only prevalent predictor whereas P-E fit had no impact (Fig. 1).

Finally, Model 6 putting all five vocational outcomes and personal attributes within the same SEM model found P to be the strongest predictor for four of the five vocational outcomes: Intent ($\beta = .62$), Lifelong ($\beta = 0.53$), Leadership self-efficacy ($\beta = 0.61$), and Resilience ($\beta = 0.58$). The path from E to Anxiety was statistically significant ($\beta = 0.82$), indicating that a threatening workplace tends to induce anxiety. However, interestingly, the path from E to Lifelong was significantly positive ($\beta = 0.18$), indicating that a threatening environment due to anticipation and fear of uncontrollable and unfavourable situations could facilitate a potential employee's commitment to lifelong engagement in the industry (Fig. 2).

As the key issue to investigate was the effect of P-E fit on vocational outcomes, an inspection of the paths from P-E fit to outcomes would be essential. As shown in Fig. 2, P-E fit had a significantly positive path to Intent ($\beta = .13$), indicating that a match between one's personal interest and an unthreatening work environment would facilitate one's intent to join the industry after the tourism program in higher education. However, this was the only significant prediction of any of the vocational outcomes. The other paths were not statistically significant (β s = 0.05, -0.01, 0.04, and 0.09 respectively for Lifelong, Leadership self-efficacy, Resilience, and Anxiety).

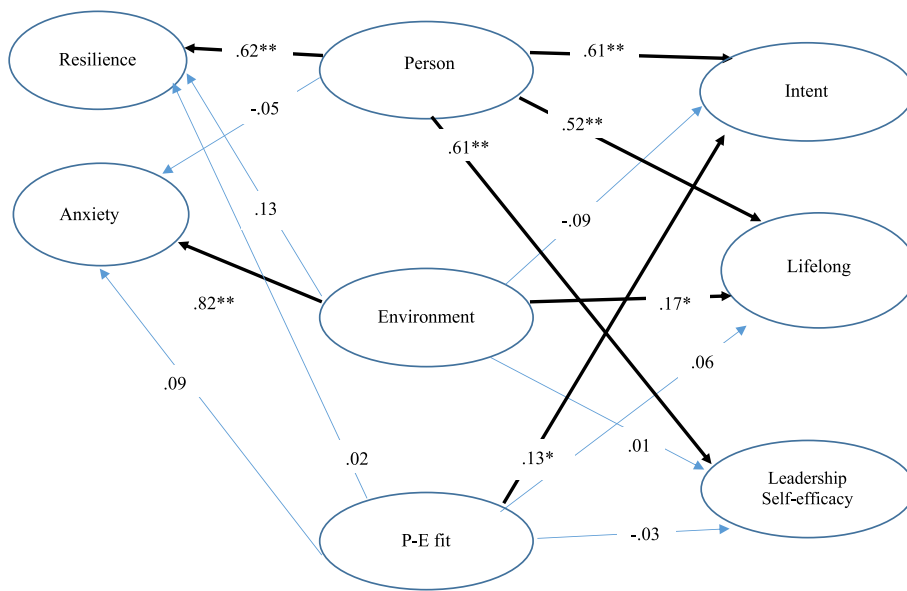
4. Discussion

This study attempts to provide empirical evidence for the contribution of P-E fit to career outcomes on top of personal (P) and

Table 2
Solution of model 5 CFA.

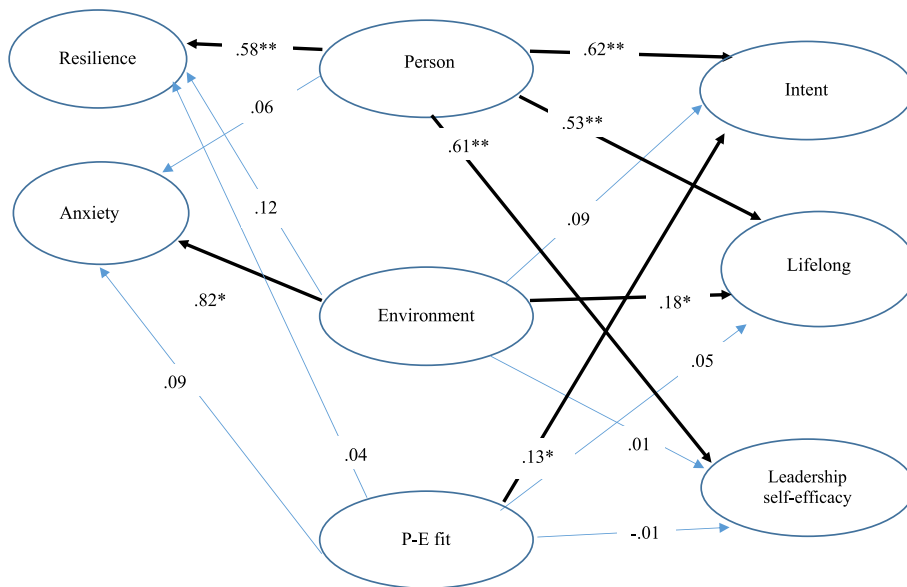
	Person(P)	Enviro(E)	P-E fit	Intent	Lifelong	Leader	Resil	Anxiety
Alpha	.90	.80	.77	.86	.88	.83	.63	.61
Mean	4.24	4.31	-0.13	3.88	3.17	3.95	4.06	4.00
SD	(0.98)	(1.11)	(0.85)	(1.02)	(1.12)	(0.99)	(0.81)	(0.85)
Factor Loadings								
Item 1	.82**	.70**	.69**	.91**	.85**	.76**	.78**	.56**
Item 2	.88**	.80**	.78**	.66**	.82**	.75**	.47**	.66**
Item 3	.88**	.76*	.72**	.92**	.87**	.85**	.55**	.52**
Factor Correlations								
Enviro	.22**							
P-E fit	-.14*	.10						
Intent	.62**	.24**	.06					
Lifelong	.56**	.30**	.01	.64**				
Leader	.61**	.15*	.10	.38**	.30**			
Resilience	.60**	.25**	.03	.53**	.40**	.79**		
Anxiety	.11	.82**	.19*	.20*	.28**	-.04	.03	

N = 380. * $p < .05$. ** $p < .001$.



* $p < .05$. ** $p < .001$.

Fig. 1. Paths from 3 predictors to 5 outcomes (Model 1-5)
* $p < .05$. ** $p < .001$.



* $p < .05$. ** $p < .001$.

Fig. 2. Paths from 3 predictors to 5 outcomes (Model 6)
* $p < .05$. ** $p < .001$.

environment (E) factors. The career outcomes and personal attributes included five variables (i.e., intent to join tourism industry, lifelong commitment, leadership self-efficacy, resilience, and anxiety) relevant to tourism students in Hong Kong. Personal interest and a threatening environment were operationalised as personal (P) and environmental (E) predictors, respectively, together with a P-E fit predictor, operationalised as the interaction of P and E, both in a positive sense.

4.1. Answering the RQs

RQ1. Do P and E factors distinctly predict vocational outcomes and personal attributes?

The analysis found that the distinct predictions of P and E on the various outcomes supported the differential predictions hypothesis (Models 1 to 5). Hence P and E each tends to have a distinct contribution to each career outcome.

RQ2. Does P-E fit (i.e., positive P \times positive E) add value to the predictions?

The answer is 'yes' for the intent to join the industry. The significant predictive path from P-E fit to Intent (Model 1) supported the P-E fit prediction of that specific vocational outcome.

Overall, the findings revealed the strong predictive power of personal interest for four of the five variables (i.e., intent to join tourism industry, lifelong commitment, leadership self-efficacy, and resilience). In other words, personal interest in the career tends to be the strongest driver of a person's intent to join tourism, willingness to choose tourism as a lifelong career, readiness to be a leader in the industry, and the capability to remain resilience during difficult times. These results appear to be in line with the findings of [Choy and Yeung \(2022\)](#), [Su \(2020\)](#), [Atitsogbe et al. \(2018\)](#); and [Kadir et al. \(2017\)](#) who suggested that career interest is a powerful motivator of career choice that can counter unfavourable job natures. Our findings also support the findings of [Yeung et al. \(2012\)](#) and [Choy and Kamoche \(2021\)](#), showing that positive affect leads to long-term career engagement. Nevertheless, the results did not find evidence to support [Atef and Al Balushi \(2017\)](#) who indicated that a tourism job may only serve as a stepping stone into another industry for many new employees. In particular, the results concur with previous research showing that positive association of vocational interest with one's eagerness and confidence to take up the leadership role ([Bergner et al., 2019](#); [Chan et al., 2000](#)).

Consistent with previous studies (e.g., [Aguiar-Quintana et al., 2021](#); [Khawaja et al., 2021](#)), threatening events tend to be a strong driver of anxiety. As such, a threatening environment can be detrimental to one's wellbeing. However, despite the presumably negative effect of a threatening environment on career outcomes, the effect was negligible for most of the outcome variables (Intent, Leadership self-efficacy, and Resilience). Moreover, surprisingly, the effect of a negative Environment on Lifelong (i.e., lifelong commitment to a career in tourism) was significantly positive, implying that tourism students are optimistic about their long-term career prospects in the industry. Interesting, a similar finding was reported in [Reichenberger and Raymond's \(2021\)](#) a study in New Zealand study. However, our findings go beyond previous studies in the Philippines ([Benaraba et al., 2022](#)), Mainland China ([Birtch et al., 2021](#)), United States ([Wong et al., 2021](#)), and Pakistan ([Khawaja et al., 2021](#)), which suggest that challenges and uncertainties caused by COVID-19 are a destabilising factor of career intention and job change. The inconsistent findings imply that tourism students' attitude towards career choice may be culture specific ([Kim et al., 2016](#); [McGinley et al., 2020](#)). Further research is required to examine potential cultural differences in the effects of driving forces on initial career decisions.

The current findings seem to favour the differential predictions hypothesis, as the joint P and E interaction effect was found only for Intent, one of the five outcomes. That is, whereas P had a significantly positive prediction of career intention, and a negative E (threatening crises) had a weak and nonsignificant effect, P-E fit (i.e., a positive personal interest together with a favourable work environment) had a significantly positive contribution to Intent on top of the Person and Environment effects. Hence for this sample and within this context, P-E fit seems to have additional, albeit small, contribution to career intention, but little contribution to the other desirable outcomes overall. Hence, the merit of P-E fit should not be undermined, theoretically and practically, given the practical significance of the contribution to new recruits' intent to join the tourism industry.

4.2. Practical implications

Tourism is one of the key pillars of Hong Kong's economy as it creates enormous job opportunities. Unfortunately, tourism in Hong Kong has been hit by the triple whammy of social unrest, international disputes such as the Sino-U.S. trade war, and then the pandemic. Our findings highlight the importance of enhancing students' personal attributes (P) such as career interest, which may counter the detrimental E effects in an era of crisis. The significant contribution of P to a range of career outcomes (Intent, Lifelong, Leadership self-efficacy, and Resilience) implies that to facilitate students to make their immediate and long-term career decisions (Intent, Lifelong), to performance (Leadership self-efficacy), and function healthily (Resilience), higher education providers should endeavour to strengthen their personal attributes. Evidence shows that a person's interest may lead to initiate career choice, long-term career commitment, leadership development, and resilience when faced with hardships. In practice, educators need to revisit their curriculum and pedagogies to focus on enhancing students' occupational interests and competencies at an early stage (e.g., first year in higher education). Once a student has developed a strong interest in and passion for the occupation, the intrinsic motivation may outweigh an unfavourable work environment (e.g., the fear for extraneous events), even though personal interest in the career may not help with the anxiety related to the career nature. Educators' ongoing engagement with students is expected to boost their interest, hope and career aspiration in tourism ([Snijders et al., 2020](#); [Zhong et al., 2021](#)); hence a warm relationship between teachers and students in higher education institutions is crucial for reinforcing students' personal attributes. To further boost a positive workplace environment, industry practitioners' voices and sharing of experiences have paramount contributions because they have even higher credibility than the academics in higher education in real-life challenges and how to handle them ([Van Hoek et al., 2011](#)). Guest speakers should therefore be invited from the industry to share their real-world experiences and insights about industry prospects, which the students will find useful especially in the currently insecure situations. At a macro level, policy makers will also need to consider ways to reduce the concerns of tourism workers about adverse E factors. Given adequate government support, tourism

educators and industry employers will be able to adjust their current approaches to rebuild students' confidence and interest to launch their career in tourism after graduation.

4.3. Strengths, limitations, and future research

The present study has extended our knowledge of applying P-E fit theory and the differential predictions hypothesis to predict career outcomes and therefore to find ways to effectively face the challenges of an unfavourable vocational environment. By identifying the predictive power of a single dimension (P or E), or P-E fit emphasising the strength of the combined effects of P and E on a range of outcome variables, we will be able to target vital productivity, motivation, and wellbeing outcomes to enable tourism students' career success and the industry's revival. The contribution of this study has been to support the notion of P-E fit theory for initial career choice, and the differential predictions of P and E distinctly for other vocational outcomes. This research lays the groundwork for further research in tourism elsewhere and perhaps in other industries. Our finding showing the strengthen of affective self-concept as a strong P factor in driving vocational choices (also see Choy & Yeung, 2022; Yeung & McInerney, 2005) is of particular importance as it highlights the need for educators and tourism organisations to promote personal interest (P) as a strong motivating factor to counter any unfavourable environment factors (E) to outweigh any perceived extraneous threats to a tourism career in future.

Despite the strengths, this study cannot determine causal inferences and explore changes of individuals' attitudes/emotions, given its cross-sectional nature. A longitudinal study would be useful to test causal relations of the identified variables. Considering that people's behavioral intentions change overtime in response to evolving environments, tourism stakeholders would need to take the findings and recommendations with caution. As time sequence cannot be established to make any causal interpretation, the patterns found in the present study may only reflect the participants' intentions at that particular point in their careers. In terms of the selected variables, other extrinsic factors such as job nature, remuneration, career prospects, etc., which are beyond the scope of the present study with a focus on 'an era of crisis', should be further investigated in future research. Because the study was conducted in Hong Kong, the findings may not be generalised to other cultures or tourism markets where tourism may not be a major income-earning industry. Given tourism in Mainland China is seemingly recovering swiftly from COVID-19 with its domestic demand, researchers may consider replicating the present study in China. Further investigations using a broader range of motivational and behavioral constructs may also shed more light on the application of P-E fit theory and differential predictions to test their theoretical and practical implications.

5. Conclusion

Our studies set out to scrutinise the predictions of P-E fit theory versus a differential predictions hypothesis for a range of vocational outcomes for higher education students in tourism. Students' personal interest (P), was found to strongly predict intent to join the industry, lifelong commitment to the career, leadership self-efficacy, and resilience, whereas a threatening work environment (pandemic, social unrest, international disputes) would increase anxiety. These findings implying that P and E differently predicted various outcomes supported a differential predictions hypothesis. However, P-E fit (a match between a positive P and a positive E) added value to the prediction of students' intent to join the industry, supporting the P-E fit hypothesis. Evidence shows that P-E fit matters for vocational students' initial career choice. P-E fit therefore matters for the tourism industry to revive and thrive by effectively attracting new employees to the industry. Whether P-E fit matters for vocational outcomes other than initial career choice will need further research.

Credit author statement

Monica Waichun Choy: Conceptualization, Data Curation, Formal Analysis, Funding Acquisition, Investigation, Methodology, Project Administration, Resources, Software, Supervision, Validation, Visualization, Writing – Original Draft, Writing – Review & Editing. Alexander Seeshing Yeung: Conceptualization, Data Curation, Formal Analysis, Funding Acquisition, Methodology, Visualization, Writing – Original Draft, Writing – Review & Editing.

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Appendix. Variables

Construct	Alpha	Mean	SD	No.	Item
Person	.90	4.24	0.98	P1	I am liking my preferred hospitality discipline
				P2	I am interested in my preferred hospitality discipline
				P3	I am enjoying my preferred hospitality discipline

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Construct	Alpha	Mean	SD	No.	Item
Environment	.80	4.31	1.11	E1	I fear that any infectious disease can suddenly destroy the economy.
				E2	I fear that people may suddenly lose their jobs when international disputes occur (e.g., political fights, trade war)
				E3	I fear that social unrest and violence may happen any time causing economic crisis (e.g., anti-government protests)
PE fit	.77	−0.13	0.85	P1xE1r	zscore of P1 x zscore of reverse-scored E1
				P2xE2r	zscore of P2 x zscore of reverse-scored E2
				P3xE3r	zscore of P3 x zscore of reverse-scored E3
Intent	.86	3.88	1.02	I1	I will join the hospitality workforce after graduation
				I2	I am ready to become a staff member in the hospitality industry
				I3	When I complete my study, I will join the hospitality profession
Lifelong	.88	3.17	1.12	L1	I am willing to be in the hospitality industry till I retire from work
				L2	I will not leave the hospitality profession if I don't need to
				L3	Hospitality will be my career for the whole life
Leadership self-efficacy	.83	3.95	0.99	Le1	I am a good leader in the hospitality and tourism sector
				Le2	I am able to motivate employees to achieve desired performance
				Le3	I am confident to lead a team
Resilience	.63	4.06	0.81	R1	I can cope when things don't go well for me
				R2	When something goes wrong, I remind myself that everyone has problems, not just me
				R3	When things go wrong, instead of getting upset, I try to find a way to make things better
Anxiety	.61	4.00	0.85	A1	I worry about my career prospect in hospitality industry
				A2	I tend to get anxious about my duties serving my customers
				A3	When someone criticises my work, I worry a lot

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