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# Planned Happenstance and Entrepreneurship Development: The Case of Japanese Undergraduate Students

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**Abstract:** This research aimed to investigate Japanese university students' entrepreneurial development processes using the happenstance learning theory. The current research was an empirical study investigating the role of risk propensity, lifetime employment orientation, and entrepreneurship-related exploratory behaviour in developing the entrepreneurial intention of university students in Japan. Data were collected from 214 undergraduate students in Japan. The results demonstrated that the risk propensity characteristic of students influenced entrepreneurial intentions through entrepreneurship-related exploratory behaviour and lifetime employment orientation. The research also found that leadership experience moderated the relationship between risk propensity and entrepreneurship-related exploratory behaviour and the relationship between entrepreneurship-related exploratory behaviour and entrepreneurial intention. By applying the happenstance learning theory in an entrepreneurship study, the current research provides meaningful insights for research scholars, educators, and policymakers interested in the entrepreneurial intentions of students. This paper concludes with a discussion on the theoretical implications and future research directions.

**Keywords:** entrepreneurial intention; risk propensity; students' entrepreneurship; entrepreneurial learning; leadership experience; the happenstance learning theory; Japan



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## 1. Introduction

In Japan, the majority of students are employed by large companies or government offices after graduating from university, which indicates that little attention is given to their entrepreneurial development. According to Global Entrepreneurship monitor (GEM) 2022/2023 (Global Entrepreneurship Research Association n.d.), very few Japanese people think that becoming an entrepreneur is a good choice (Japan (year 2022) 23.75; global 67.36; regional 67.70), and the entrepreneurial intention rate in Japan is extremely low when compared to other countries (Japan (year 2022): 5.05; global: 22.33; regional: 25.64). The ratio of product/service development to new businesses in Japanese companies is low when compared internationally (Deloitte Tohmatsu Consulting/Deloitte Tohmatsu Financial Advisory 2013; Sekiguchi 2015). According to industry and research experts, stimulating entrepreneurial activities for sustainable economic growth and job creation is essential for Japan (Okamuro 2014; Small and Medium Enterprise Agency 2017). The United States and Europe dominate the majority of entrepreneurship research, thus, less research has been conducted on the factors that may contribute towards entrepreneurship development in Japan. However, given Japan's unique context, applying western theories to Japan for understanding entrepreneurship may not always be possible.

In understanding entrepreneurship in Japan, the factors that should be considered are the inadequate entrepreneurship education for young people and stability orientation in employment among young people. GEM 2022/2023 (Global Entrepreneurship Research Association n.d.) showed that entrepreneurial education at the schooling stage is far less

in Japan than in the region or other countries (Japan (year 2022) 2.49; global 3.31, regional 4.27). Additionally, Japanese students strongly prefer large companies and lifetime employment (Sanno University 2019). Many companies recruit fourth-year college students and employ them as regular workers immediately after graduation. Given Japan's current low rate of job change, individuals who miss this employment route, including those who select entrepreneurship as careers, are less likely to find long-term full-time employment in large and well-known companies. Japanese students who seek to avoid risk will not want to start a business. The current study proposes that students' desire for long-term employment strongly influences their decision to start a business.

Given the unique context of Japan, the current study intends to provide an in-depth understanding of the process of entrepreneurial intention among Japanese students by applying the planned happenstance theory (Mitchell et al. 1999) or the happenstance learning theory (HLT) (Krumboltz 2009; Krumboltz et al. 2013). These theories are based on the premise that unanticipated contingencies determine approximately 80% of an individual's career (Mitchell et al. 1999). The reason for applying HLT to understand the process of entrepreneurial intention among Japanese students is that in a situation similar to Japan, in which a planned and systematic entrepreneurship education for students and the number of experienced entrepreneurs to model are insufficient, understanding how contingencies that occur in the daily lives of students lead to entrepreneurial intention is interesting. In Japan, studies mention the planned happenstance relatively frequently because of the frequent occurrence of accidental job changes and reassignments due to organisational reasons (e.g., Yamashita 2010). Recently, in Japan, three papers were published in a special issue on HLT in the field of career education (Sugimoto et al. 2023; Yazaki et al. 2023; Yoshikawa 2023).

Our research questions were: (1) what factors and processes enhance entrepreneurship among Japanese students? (2) Can HLT be applied to the entrepreneurial process? The current study focused on risk propensity, lifetime employment orientation, and exploratory behaviour as antecedents for understanding entrepreneurial intention among students in Japan. We explain that the development process of entrepreneurial intention among students in the form of risk orientation increases their exploratory behaviour but decreases their desire for lifetime orientation. We also explore leadership experience as a moderating mechanism influencing the relationships mentioned above.

## 2. Literature Review

### *2.1. Theory of Planned Behaviour*

The research on student entrepreneurship has mainly been based on the theory of planned behaviour (TPB), which was developed by Ajzen (1991) and explains the process by which attitudes lead to behaviour. The theory assumes three antecedents, namely, attitude, subjective norm, and perceived behavioural control, which are linked to intention, which, in turn, transforms behaviour. For example, Engle et al. (2010) demonstrated that students' entrepreneurial intentions were affected by these three factors based on the TPB using GEM data from 12 countries.

In addition, based on the TPB, several studies have demonstrated the effectiveness of official entrepreneurial programmes. According to Rauch and Hulsink (2015), participating in education programmes increased attitudes, perceived behavioural control, and entrepreneurial intention. Moreover, Solesvik (2013) found that individuals who participated in these programmes displayed high entrepreneurial motivation. Adu et al. (2020) showed that entrepreneurial education enhanced Ghanaian students' behavioural control, risk-taking ability, and pro-activeness. Resent longitudinal studies also showed that entrepreneurial education for Nigerian students enhanced their entrepreneurial intentions (Otache et al. 2021).

### 2.2. Other Entrepreneurship-Related Factors

Alternatively, other studies have suggested that formal education programmes are insufficient for enhancing entrepreneurial intention. For example, Karimi et al. (2016) examined the effects of an education programme on the subjective norms and perceived behavioural control of students. The study also investigated these effects on entrepreneurial intention and found no effect for programmes in which students were coerced to attend. However, the study found an effect for those who voluntarily participated. Another study found no effect for educational programmes (Bae et al. 2014; Oosterbeek et al. 2010). Oosterbeek et al. (2010) examined the effects of educational programmes and found that these programmes did not significantly enhance entrepreneurial skills after controlling for the region of residence. Furthermore, Bae et al. (2014) conducted a meta-analysis and reported that the effect of entrepreneurship education was not significant when considering the intention of firms prior to receiving entrepreneurship education. Entrepreneurship educational support did not impact the entrepreneurial intentions directly, but had an indirect positive effect mediated by three components of the TPB and entrepreneurial self-efficacy.

Other previous research has also examined the effects of informal entrepreneurial education in improving entrepreneurship. Preedy et al. (2020) argued that extra-curricular enterprise activities, including experiential learning, self-directed learning, and social learning, should also be incorporated into entrepreneurial learning. Pittaway et al. (2015) found that club activities led to improved entrepreneurship. As these results show, it is worthwhile to examine how student behaviours related to enterprise, as well as formal programmes, can be linked to the promotion of entrepreneurship.

In Japanese or similar environments, in which opting for entrepreneurship as a career choice is difficult, we cannot assume that formal entrepreneurship programmes based on the TPB will enhance entrepreneurial intention. Instead, the current study examined the learning aspect in acquiring entrepreneurship in conditions where improving entrepreneurship is difficult. Scholars have examined the process of enhancing entrepreneurial intention from the perspective of individual and collective learning (Enatsu et al. 2023). Specifically, the current study focused on the entrepreneurial learning of students using HLT.

### 2.3. Happenstance Learning Theory

HLT is a career counselling theory that aims to link learning experiences, including unplanned events, to career success (Krumboltz 2009; Krumboltz et al. 2013; Mitchell et al. 1999). One of the propositions of HLT is that to "engage in exploratory actions as a way of generating beneficial unplanned events" (Krumboltz 2009, p. 144). In other words, the exploration behaviour is expected to lead to an increase in unexpected events related to careers that are socially undesirable.

Another critical concept in HLT, besides exploration, is skills (Kim et al. 2014). Mitchell et al. (1999) formulated the concept of five planned happenstance skills, which are important for creating and recognising career opportunities: curiosity, persistence, flexibility, optimism, and risk-taking. Curiosity denotes new learning opportunities, persistence refers to exerting effort despite setbacks, flexibility pertains to changing attitudes and circumstances, optimism is defined as viewing new opportunities as possible and attainable, and risk-taking points to taking action in the face of uncertain outcomes (Mitchell et al. 1999, p. 118). Chance events can be defined as "unplanned, accidental, or otherwise situational, unpredictable, or unintentional events or encounters that have an impact on career development and behaviour" (Rojewski 1999, p. 269). These skills not only take into account the chance factor in career development, but they also provide guidelines for people in taking constructive actions and creating opportunities to achieve goals (Rhee et al. 2016).

Research based on HLT is being conducted, focusing on topics such as life adjustment and career barriers, the transition to remote work in a pandemic disaster, and students' psychological wellbeing and academic adjustment (Kiekel et al. 2022; Kim et al. 2018; Valickas et al. 2019). However, its role in the development of entrepreneurial intention has not been highlighted in most of the literature on entrepreneurship. Chaturvedi (2022) proposed a framework including unplanned events, risk propensity, and micro-entrepreneurship based on HLT, although it was not an empirical study. The current study proposed that HLT is highly applicable to entrepreneurship development in specific contexts. We applied HLT by viewing informal entrepreneurial learning as an event that is not expected to lead to entrepreneurship. For instance, in the context of Japan, which is unique from the rest of the world, this theory may explain the entrepreneurship phenomena related to entrepreneurial intention.

## 3. Hypotheses

### *3.1. Risk Propensity and Lifetime Employment Orientation*

Figure 1 provides the hypotheses for this study. Out of the five happenstance skills (Mitchell et al. 1999), risk-taking refers to taking action in the face of uncertain outcomes and was the focus of this study. Krumboltz (2009) mentioned the necessity of creating unplanned events through exploratory action, but also that such unplanned events involve risks. Japanese people are highly averse to uncertainty (Minkov et al. 2010), and in order to study the status of entrepreneurship in the Japanese context, it was considered important to focus on attitudes toward risk among the five planned happenstance skills.

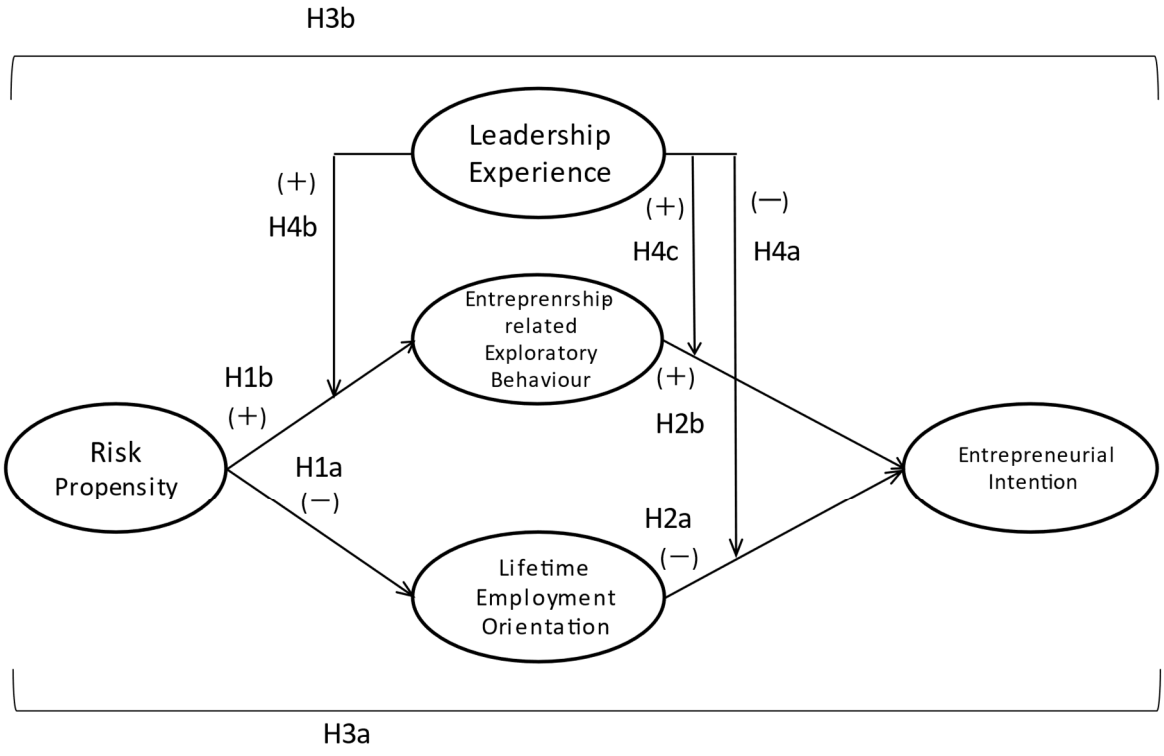


**Figure 1.** The overall model and hypotheses of this study. Note. (+) = positive effect, (–) = negative effect.

Risk preference is considered a determinant of risk propensity, which is the tendency of an individual to take or avoid risk in a particular context (Mullins and Forlani 2005; Sitkin and Pablo 1992). The psychological attributes of entrepreneurs play a significant role in entrepreneurship behaviour (e.g., Antoncic et al. 2015; Baum et al. 2007; Chell et al. 2008; Hansemark 1998, 2003; Low and MacMillan 1988; Shaver and Scott 1991). According to the previous research, the self-employment decision is a result of different factors, including the personal characteristic of the entrepreneurs (Brandstätter 2011). In other words, the tendency of individuals to avoid or take risks is closely related to self-employment in the long run (Prieto 2010).

We define lifetime employment orientation as "the preference for young people to stay in a particular organisation or occupation after graduation". It is similar to the focus scale (Stumpf et al. 1983), which measures "how sure one feels in his/her preference for a particular occupation, job, and organization" (Stumpf et al. 1983, p. 196). In Japan, university students are often employed by companies and other organisations after graduation, and the main lifetime employment orientation in Japan is to stay in one organisation after graduation.

Thus, the current study argued that a lack of entrepreneurship exists for Japanese students, who displayed a cultural characteristic of opting for lifetime employment and the propensity to take risks, both of which played important roles in entrepreneurial intention. Simply put, the risk propensity characteristic of Japanese students will lead to low levels of lifetime employment orientation.

**Hypothesis 1a (H1a).** *Risk propensity is negatively related to lifetime employment orientation.*

### 3.2. Risk Propensity and Entrepreneurship-Related Exploratory Behaviour

Exploratory behaviour is defined as "behaviour that expands new ways of looking at things or increases chance experiences, leading to increased future career possibilities, including cross-disciplinary exploratory behaviour and pseudo-experimental exploratory behaviour". In HLT, learning experiences without deciding on a career are valuable for the future career (Krumboltz 1996). In particular, in Japan, where no formal entrepreneurial learning occurs, gaining learning experience about entrepreneurship is necessary for enhancing entrepreneurship.

Cross-disciplinary exploratory behaviour is defined as "behaviour that expands career possibilities, including entrepreneurship, by acquiring a new way of looking at things". For prospective entrepreneurs to discover business opportunities, utilise external resources, and expand their network of contacts, they need to acquire a different way of thinking through unique life experiences and learning in various fields (Dutta et al. 2011; Kutsuna 2013; Mars 2007). Cross-domain exploratory behaviour is useful for acquiring this way of thinking. Alternatively, pseudo-experimental exploratory behaviour refers to "exploratory activities that include elements similar to entrepreneurship". Experiences related to entrepreneurship are a type of imitative entrepreneurial learning, which contributes to the acquisition of entrepreneurial attitude by enhancing one's ability to form human networks, identify problems, and make decisions (Kawana 2014).

According to previous studies, the risk propensity of an individual influences their entrepreneurial behaviour (Forlani and Mullins 2000; Sitkin and Pablo 1992; Stewart and Roth 2001). Moreover, past research on the psychology of entrepreneurship found that persons with high levels of risk propensity grasp opportunities and will expose themselves to an environment with uncertain outcomes (Forlani and Mullins 2000). For instance, the risk propensity of an individual will lead to exploratory behaviour, that is, entrepreneurship alertness (Cui et al. 2016). The literature argues that exploration moderates the relationship between the career experience and knowledge of entrepreneurs (Politis 2005). Thus, the current study proposed that exploratory behaviour mediates the process of enhancing entrepreneurial intention.

The current study argues that Japanese students with a high risk propensity are more likely to engage in new behaviours, which can change their existing view of things, form relationships, identify problems, or make decisions. Based on the above-mentioned literature, we proposed the following hypothesis.

**Hypothesis 1b (H1b).** *Risk propensity is positively related to entrepreneurship-related exploratory behaviour.*

### 3.3. Lifetime Employment Orientation and Entrepreneurial Intention

Entrepreneurial intention is considered to be a long-term evolving process (Lee and Wong 2004). The factors determining an individual's intention to start a new business have been the subject of a considerable stream of scholarly research since the early 1990s (Carr and Sequeira 2007; Kolvereid 1996; Krueger and Carsrud 1993; Lee and Wong 2004). Following the life course perspective, (Kautonen et al. 2010) found that a longer work history is less likely to be related to entrepreneurial intention compared with individuals who have spent less time in the industry. According to HLT, flexibility towards a career is one of the important happenstance skills that may provide exposure to people that influences their selection of a career (Mitchell et al. 1999). In this sense, individuals with negative attitudes towards working long-term for organisations are likely to possess high levels of entrepreneurial intention. In fact, previous studies argued that a strong lifetime employment orientation is the reason for the low rate of entrepreneurship in Japan (Kautonen et al. 2010). Conversely, young students with low levels of lifetime employment orientation are more open to careers other than those in large corporate organisations or with stable employment. Therefore, the current study argues that Japanese students with low levels of life employment orientation will exhibit high levels of entrepreneurial intention.

**Hypothesis 2a (H2a).** *Lifetime employment orientation is negatively related to entrepreneurial intention.*

### 3.4. Exploratory Behaviour and Entrepreneurial Intention

Exploratory behaviour is considered to be one of the important factors for shaping human behaviour (Loewenstein 1994). According to the literature, the passion for entrepreneurship is higher for individuals with an intense desire to question things and learn more. In fact, Syed et al. (2020) reported that a passion for entrepreneurship towards entrepreneurial intention is strengthened in the presence of curious or exploratory behaviour. In addition, Dutta et al. (2011) and Timmons and Spinelli (1994) demonstrated that entrepreneurship-related experience and learning can lead to the acquisition of skills necessary for business awareness and resource utilisation. Especially in Japan, where few people have experience in starting a business, promoting exploratory learning behaviour in entrepreneurship can lead to the acquisition of an entrepreneurship (Matsuda 1997). Empirical studies have also illustrated that students with experience in simulated entrepreneurship acquire high entrepreneurial intention levels (Zhao et al. 2005). Therefore, the present study argues that students with high levels of exploratory behaviour will display high entrepreneurial intention levels.

**Hypothesis 2b (H2b).** *Entrepreneurship-related exploratory behaviour is positively related to entrepreneurial intention.*

### 3.5. Mediating Roles of Exploratory Behaviour and Lifetime Employment Orientation

Researchers have mainly focused their attention on the mechanisms that can develop entrepreneurial intention (e.g., Fitzsimmons and Douglas 2011). Entrepreneurial intention is defined as "entrepreneurs' states of mind that direct attention, experience and action toward a business concept" (Bird 1988, p. 442). Risk propensity is an important characteristic in the development of entrepreneurial intention (Nabi and Liñán 2013). However, less is

known about the mediating mechanism that may lead to entrepreneurial intention through risk propensity (Gu et al. 2018). In the present research, we argue that risk propensity may lead to entrepreneurial intention through low levels of lifetime employment orientation and entrepreneurship-related exploratory behaviour.

According to the literature, risk propensity may lead to self-regulatory behaviour, which enhances individuals' self-efficacy in becoming more flexible and curious about their career (Nabi and Liñán 2013). Consequently, students with a high risk propensity are predicted to be interested in experiencing a variety of jobs, thus decreasing lifetime employment and leading, ultimately, to entrepreneurial intention.

**Hypothesis 3a (H3a).** *Risk propensity indirectly influences entrepreneurial intention by reducing lifetime employment orientation.*

In addition, according to HLT, flexibility and exploratory behaviour are important for using unexpected events as opportunities (Ahn et al. 2015). For instance, risk propensity may lead to flexible choices instead of the focus on the long-term ordination of work (Kautonen et al. 2010). Additionally, risk propensity will lead to exploratory behaviour (Syed et al. 2020). Therefore, we present the following hypothesis.

**Hypothesis 3b (H3b).** *Risk propensity indirectly influences entrepreneurial intention by promoting entrepreneurship-related exploratory behaviour.*

### *3.6. Leadership Experience as a Boundary Condition*

The current study purports that the process from risk propensity to entrepreneurial intention, as previously described, will be more pronounced for young people with specific characteristics. Thus, we consider leadership experience in various situations, such as being the head of a club or club activities, in terms of characteristics.

Leadership is considered one of the necessary qualities of entrepreneurs. Vecchio (2003) suggested that the research on entrepreneurship needs to consider a leadership perspective. We focus on leadership experience as a moderating factor between risk propensity and entrepreneurial intention. Leadership experience has been shown to be associated with the motivation to lead (Bergner et al. 2019; Chan and Drasgow 2001).

In terms of student leadership, we also apply the theory of the RIASEC (realistic, investigative, artistic, social, enterprising, and conventional) model of Holland (1997). According to the author, a corporate-type person actively seeks to exercise leadership and influence. Alternatively, the enterprising type prefers activities that involve achieving goals and negotiating with others and acquires competencies in leadership, interpersonal relationships, and persuasion. They also value controlling others and having ambitions (Holland 1997). Therefore, the current study proposes that leadership experiences during school years reflects the desire to lead the surrounding people.

Regarding the process by which high risk propensity indirectly influences entrepreneurial intention through a reduction in lifetime employment orientation, a possibility exists that not all people with low levels of lifetime employment orientation increase their entrepreneurial intention but merely increase their tendency to repeatedly change jobs. In this context, as previously mentioned, an extensive leadership experience is considered an embodiment of the desire for achievement by motivating a person to lead the people around them (Bergner et al. 2019; Chan and Drasgow 2001). Students with a low lifetime orientation preference are less inclined to work for a stable company to begin with, but the increased degree to which they try to lead others towards this tendency is thought to increase their desire to become an entrepreneur. Therefore, leadership experience moderates the mediating effect of lifetime employment orientation and entrepreneurial intention.

**Hypothesis 4a (H4a).** *Leadership experience moderates the negative relationship between lifetime employment orientation and entrepreneurial intention, such that the relationship is weaker for students with more leadership experience.*

We then describe the process by which risk propensity indirectly influences entrepreneurial intention via facilitating entrepreneurship-related exploratory behaviour. Past research suggests that leadership roles lead to risk-taking, openness to change, and innovation, which are characteristics of entrepreneurs (García-Granero et al. 2015; Mokhber et al. 2018). The exploratory behaviour of young people with high levels of risk propensity includes behaviours unrelated to entrepreneurship such as those based on mere curiosity. Conversely, students with a desire to lead others are likely to opt for entrepreneurship-related behaviours consciously or unconsciously among their exploratory behaviours. In other words, for young people with numerous leadership experiences, a high risk propensity is likely to promote cross-domain exploratory behaviour and simulated experiences related to entrepreneurship.

**Hypothesis 4b (H4b).** *Leadership experience moderates the positive relationship between risk propensity and entrepreneurship-related exploratory behaviour, such that the relationship is stronger for students with more leadership experience.*

In addition, the study proposes that leadership experience exerts a moderating effect on the degree to which young people who engage in entrepreneurship-related exploratory behaviour increase their entrepreneurial orientation. Bergner et al. (2019) found that as leadership experience increases, the perception that they will succeed as leaders will increase and they will therefore try to be in a position to lead others. Chan and Drasgow (2001) also found that leadership experience increases the degree to which people try to lead, not only in terms of affect and identity, but also in the sense of obligation to assume the leadership role. Therefore, it can be assumed that higher levels of leadership experience lead to a greater acceptance of being an entrepreneur, not only in terms of their own desire to lead, but also in terms of their own mission, even if the entrepreneur has to take responsibility, through entrepreneurship-related exploratory behaviour. In other words, young people with a strong interest and sense of obligation in leading others and accomplishing something by involving others are more likely to increase their entrepreneurial intention as a result of the experience they gain from entrepreneurship-related exploratory behaviour.

**Hypothesis 4c (H4c).** *Leadership experience moderates the positive relationship between entrepreneurship-related exploratory behaviour and entrepreneurial intention, such that the relationship is stronger for students with more leadership experience.*

## 4. Materials and Methods

### *4.1. Sample*

To test the hypotheses, the study administered a survey to the students of a business administration course offered in the economics department of a national university in western Japan. The survey was administered in triplicate every two to three weeks to avoid common method bias (Podsakoff et al. 2003). The first survey measured the control variables (gender, faculty, and grade), the second survey measured the independent variable (risk propensity) and the third survey measured the mediators, the dependent variable, and the moderator (lifetime employment orientation, entrepreneurship-related exploratory behaviour, entrepreneurial intention, and leadership experience). Because the questionnaires were anonymous, participants were asked to generate unique identifiers (Fedor et al. 2001). We used these identifiers to match the data in the second and third survey. Approximately 90% of the students agreed to participate in this study and responded to the questionnaire, which led to a final sample size of 214.

### 4.2. Measures

The measures were a combination of independent, mediating, moderating, and dependent variables. The respondents were asked to rate items on a seven-point Likert-type scale (from 1 = strongly disagree to 7 = strongly agree). We employed the established measures used in previous research to collect the data except for the method to measure exploratory behaviour, which was formulated by the authors and used after confirming its reliability and validity.

Risk propensity was measured using four items from the risk orientation scale of the international personality item pool (IPIP) (Goldberg 1999), including "I am a risk taker". This scale measures the same concepts as the risk-taking scale of the planned happenstance career inventory (Kim et al. 2014). As this the risk orientation scale of the IPIP is used more frequently, these items were used. For lifetime employment orientation, we modified two items from the focus scale of the career exploration survey by Stumpf et al. (1983). Reflecting the current situation in Japan, where graduates often go straight into employment after graduation, the following statements focused on post-graduation careers: "It is important to work in one organisation after graduation" and "It is important to settle and work in one type of job (position) after graduation".

The current study found no existing scale for entrepreneurship-related exploratory behaviour, thus, we developed a scale. As previously explained, exploratory behaviour consists of cross-disciplinary and cross-domain exploratory behaviours. For the cross-disciplinary exploratory behaviour, we assumed that students acquired new perspectives after taking diverse courses in university. We assessed this using the following items: "I have taken a variety of courses, including courses in other departments" and "I have changed what I mainly want to study at university or have changed my major". Pseudo-experimental exploratory behaviour enables people to naturally acquire the knowledge and skills needed to start a business. We assessed this using two items: "I have tried to establish a kind of club, circle, or society" and "I have listened to people with entrepreneurial experience". For the variables explained thus far, we averaged the results of the responses.

For leadership experience, Bergner et al. (2019) asked respondents to indicate on a five-point scale the extent to which they had taken on leadership roles in the past year. In this study, we asked for the specific number of leadership experiences, which we believed was a more objective indicator. In addition, as students generally gain more social experience during their university years, such as through part-time work, it was considered appropriate to ask about their leadership experience during their university years. Therefore, we asked the respondents to indicate the number of times they were in a leadership position in various situations in university, such as in student life, club and circle activities, and part-time jobs (e.g., representative of a club or leader of a part-time job).

To measure the dependent variable (entrepreneurial intention), we used four items that were adopted from the entrepreneurial intention scale of Zhao et al. (2005) such as "I would like to start a new business in the next five to ten years".

To avoid confounding factors, we also controlled for gender (male and female), faculty (economics and other), and grade (from first to third year, more than fourth year).

### 4.3. Analytic Strategy

We conducted the confirmatory exploratory factor analysis using SPSS version 29, the confirmatory factor analysis using M-plus 8.1 (Muthén and Muthén 1998–2017), and analysed the hypothesized model using PROCESS macro for SPSS version 4.2 (Hayes 2017). Model 58 in the PROCESS macro for SPSS (Hayes 2017) included a control variable, the direct path, the mediating path, and a moderator. Thus, we used this comprehensive model to test our hypotheses.

## 5. Results

### 5.1. Descriptive Statistics and Factor Analysis

Prior to analysis, we examined the reliability and validity of the main variables. First, the study conducted an exploratory factor analysis using the CFA method and varimax rotation with Kaiser's normalisation. Four factors with eigenvalues of 1.0 or higher were extracted, which explained approximately 72.6% of the total variance. After rotation, all descriptors had a strong loading (0.5 and above). The factors were entrepreneurial intention (four items, $\alpha = 0.95$), risk propensity (four items, $\alpha = 0.83$), lifetime employment orientation (two items, $\alpha = 0.87$), and entrepreneurship-related exploratory behaviour (four items, $\alpha = 0.62$). These factors were generally divided as expected, except that entrepreneurship-related exploratory behaviour was not divided into two factors (cross-domain and pseudo-experience), and its Cronbach's alpha coefficient was not very high, and instead, was combined into one factor.

Based on the results of the exploratory factor analysis, the study performed a confirmatory factor analysis using the maximum likelihood parameter method with robust to non-normality with entrepreneurship-related exploratory behaviour as one factor. The result indicated that the four-factor model was a good fit for the data ($\chi^2 = 1108.51$, df = 91, $p < 0.01$; CFI = 0.98, TLI = 0.97, RMSEA = 0.042, SRMR = 0.047). Thus, we concluded that there were no major problems in terms of validity and reliability. Table 1 provides the descriptive statistics of the variables and the results of the correlation matrix.

**Table 1.** Descriptive statistics and correlation matrix.

| | | *n* | *M* | *SD* | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Gender [a] | 214 | 0.72 | 0.45 | - | | | | | | |
| 2 | Faculty [b] | 214 | 0.83 | 0.37 | 0.00 | - | | | | | |
| 3 | School year [c] | 202 | 0.49 | 0.50 | 0.10 | 0.19 ** | - | | | | |
| 4 | Risk propensity | 184 | 3.46 | 1.14 | 0.08 | −0.03 | 0.12 | - | | | |
| 5 | Lifetime employment orientation | 179 | 4.41 | 1.49 | −0.12 | 0.01 | −0.10 | −0.32 ** | - | | |
| 6 | Entrepreneurship-related exploratory behaviour | 178 | 2.79 | 1.15 | −0.19 * | −0.17 * | 0.01 | 0.29 ** | −0.15 * | - | |
| 7 | Leadership experience | 168 | 1.63 | 1.52 | 0.05 | −0.05 | 0.08 | 0.23 ** | −0.04 | 0.25 ** | - |
| 8 | Entrepreneurial intention | 178 | 2.70 | 1.55 | 0.11 | 0.01 | 0.03 | 0.47 ** | −0.34 ** | 0.52 ** | 0.17 * |

Note. [a] 0 = female and 1 = male. [b] 0 = other than Economics and 1 = Economics. [c] 0 = 1st–3rd and 1 = 4th or more. ** $p < 0.01$, * $p < 0.05$.

### 5.2. Regression Analyses

Hypotheses 1 and 2 were tested using model 58 in the PROCESS macro for SPSS (Hayes 2017). As well as the paths in Chart 1, we also placed control variables (gender, school year, and faculty), the direct path (risk propensity → entrepreneurial intention), and the path from leadership experience to the relationship between risk propensity and lifetime employment orientation. Table 2 presents the results. Risk propensity had a negative effect on lifetime employment orientation (B = −0.44, SE = 0.10, $t = -4.43$, $p < 0.01$, CI = [−0.63, −0.24]), and had a positive effect on entrepreneurship-related exploratory behaviour (B = 0.22, SE = 0.08, $t = 2.91$, $p < 0.01$, CI = [0.07, 0.37]) thus Hypotheses 1a and 1b were supported. Furthermore, lifetime employment orientation had a negative effect on entrepreneurial intention (B = −0.23, SE = 0.08, $t = -2.90$, $p < 0.01$, CI = [−0.38, −0.07]), and entrepreneurship-related exploratory behaviour had a positive effect on entrepreneurial intention (B = 0.60, SE = 0.10, $t = 6.09$, $p < 0.01$, CI = [0.41, 0.80]). Thus, Hypotheses 2a and 2b were supported.

**Table 2.** Results of regression analyses.

| Variable | B | SE | *t* | *p* | 95% CI |
|---|---|---|---|---|---|
| | | LEOR | | | |
| Constant | 0.11 | 0.32 | 0.34 | 0.73 | [−0.52, 0.74] |
| RIP | −0.44 | 0.10 | −4.43 | 0.00 | [−0.63, −0.24] |
| LEX | 0.04 | 0.07 | 0.49 | 0.63 | [−0.11, 0.18] |
| RIP × LEX | 0.01 | 0.05 | 0.19 | 0.85 | [−0.09, 0.11] |
| $R^2$ | 0.15 | | | | |
| | | EREB | | | |
| Constant | 0.55 | 0.25 | 2.21 | 0.03 | [0.06, 1.04] |
| RIP | 0.22 | 0.08 | 2.91 | 0.00 | [0.07, 0.37] |
| LEX | 0.12 | 0.06 | 2.02 | 0.05 | [0.00, 0.23] |
| RIP × LEX | 0.08 | 0.04 | 2.15 | 0.03 | [0.01, 0.16] |
| $R^2$ | 0.19 | | | | |
| | | EI | | | |
| Constant | 2.12 | 0.29 | 7.25 | 0.00 | [1.54, 2.70] |
| RIP | 0.32 | 0.10 | 3.23 | 0.00 | [0.12, 0.51] |
| LEOR | −0.23 | 0.08 | −2.90 | 0.00 | [−0.38, −0.07] |
| EREB | 0.60 | 0.10 | 6.09 | 0.00 | [0.41, 0.80] |
| LEX | −0.04 | 0.07 | −0.53 | 0.60 | [−0.18, 0.10] |
| LEOR × LEX | 0.07 | 0.05 | 1.40 | 0.16 | [−0.03, 0.16] |
| EREB × LEX | 0.14 | 0.06 | 2.22 | 0.03 | [0.02, 0.27] |
| $R^2$ | 0.46 | | | | |

Note: CI = confidence interval; RISK = risk propensity; LEOR = lifetime employment orientation; EREB = entrepreneurship-related exploratory behaviour; LEX = leadership experience; EI = entrepreneurial intention. We entered control variables of gender (0 = female and 1 = male), faculty (0 = other than Economics and 1 = Economics), school year (0 = 1st–3rd and 1 = 4th or more).

### *5.3. Mediating Effects*

We also tested Hypotheses 3a and 3b using model 4 in the PROCESS macro for SPSS (Hayes 2017). In this model, the direct path, indirect paths, and control variables (gender, school year, and faculty) were included. The number of bootstrap samples was 5000. As shown in Table 3, 95% confidence interval via bootstrap sampling of the indirect effect of lifetime employment orientation and entrepreneurship-related exploratory behaviour was above zero (effect = 0.10, SE = 0.04, CI = [0.03, 0.19]; effect = 0.18, SE = 0.05, CI = [0.07, 0.28]). Thus, hypotheses 3a and 3b were supported.

**Table 3.** Indirect effects of risk propensity on entrepreneurial intention.

| | Effect | Bootstrap SE | Bootstrap 95% CI |
|---|---|---|---|
| Total effect | 0.27 | 0.07 | [0.14, 0.42] |
| Lifetime employment orientation | 0.10 | 0.04 | [0.03, 0.19] |
| Entrepreneurship-related exploratory behaviour | 0.18 | 0.05 | [0.07, 0.28] |

Note. CI = confidence interval. Number of bootstrapping samples = 5000.

### *5.4. Moderating Effects*

We first conducted a hierarchical multiple regression analysis to test the moderating effect of leadership experience as indicated by Hypotheses 4a, 4b, and 4c. To avoid multicollinearity, the interaction terms were centred before they were input into the regression equation (Aiken and West 1991; Cohen 1978). As shown in Table 2, Hypothesis 4a was rejected because the interaction term between lifetime employment orientation and leadership experience was non-significant with entrepreneurial intention as the dependent variable (B = 0.01, SE = 0.05, $t$ = 0.19, $p$ = 0.85, CI = [−0.09, 0.11]).

As shown in Table 2, the interaction term between risk propensity and leadership experience with entrepreneurship-related exploratory behaviour as the dependent variable (B = 0.08, SE = 0.04, $t$ = 2.15, $p < 0.05$, CI = [0.01, 0.16]). Following Aiken and West

(1991), we calculated the simple slope of the effect of lifetime employment orientation on entrepreneurship-related exploratory behaviour dependant on the amount of leadership experience.

As shown in Figure 2, the slope of the simple slope was significant when the leadership experience was high (effect = 0.35, SE = 0.09, $t = 3.87$, $p < 0.01$, CI = [0.17, 0.53]), whereas the simple slope was non-significant when the leadership experience was low (effect = 0.10, SE = 0.10, $t = 0.93$, $p = 0.36$, CI = [−0.11, 0.30]). In Figure 2, entrepreneurship-related exploratory behaviour was also centred.

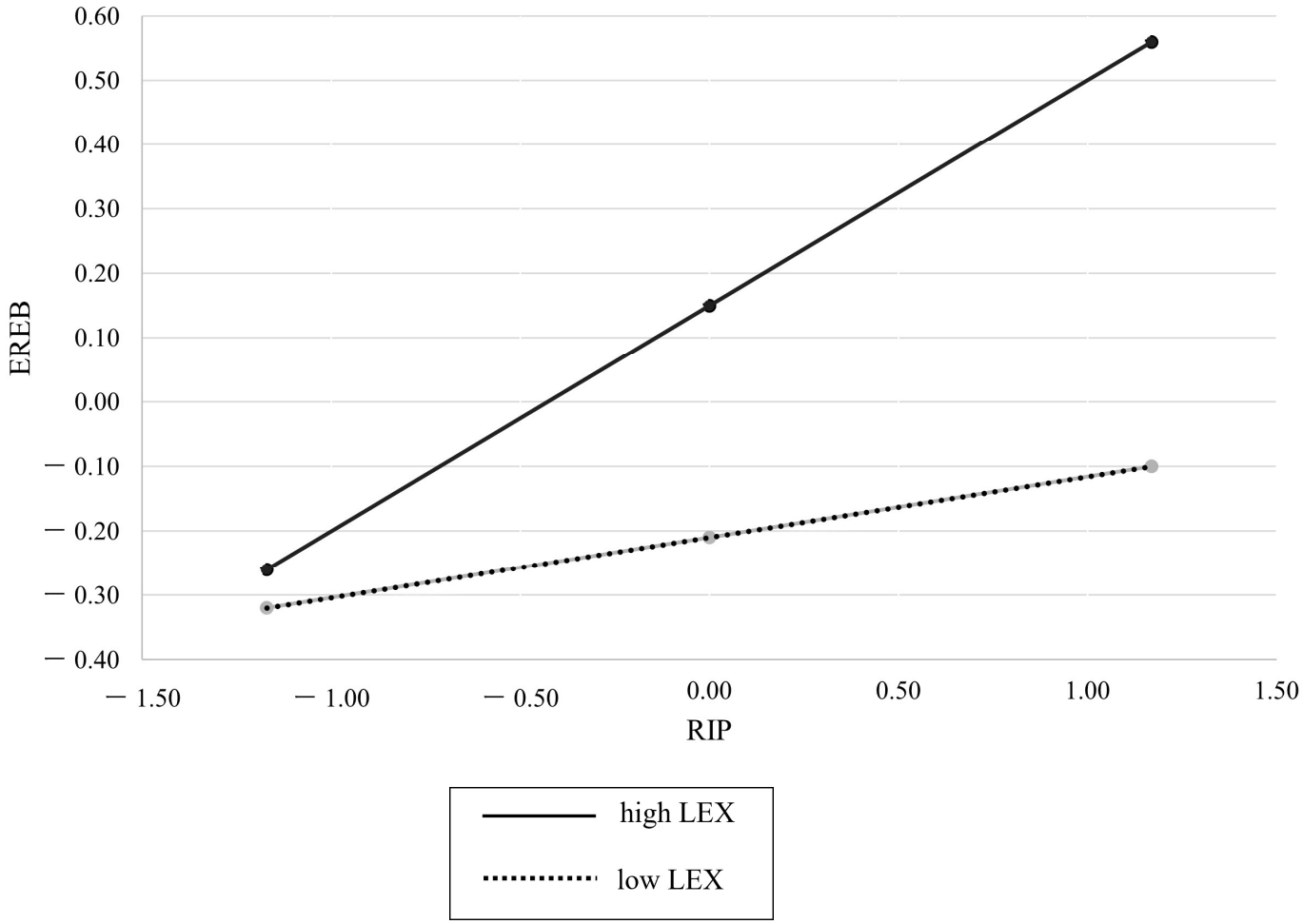


**Figure 2.** Moderating effect of leadership behaviour on the relationship between risk propensity and entrepreneurship-related exploratory behaviour. Note: RIP = risk propensity; EREB = entrepreneurship-related exploratory behaviour; LEX = leadership experience.

Furthermore, the interaction between entrepreneurship-related exploratory behaviour and leadership experience exerted a significant positive effect on entrepreneurial intention (Table 2) (effect = 0.14, SE = 0.06, $t = 2.22$, $p < 0.05$, CI = [0.02, 0.27]). Figure 3 illustrates that the slope was significant when the leadership experience was both high and low (effect = 0.82, SE = 0.14, $t = 6.08$, $p < 0.01$, CI = [0.56, 1.09]; effect = 0.38, SE = 0.15, $t = 2.61$, $p < 0.01$, CI = [0.09, 0.67]). In addition, the relationship between entrepreneurship-related exploratory behaviour and entrepreneurial intention was stronger for individuals with more leadership experience. In summary, the study confirmed that leadership experience moderated the relationship between risk propensity and entrepreneurship-related exploratory behaviour and between entrepreneurship-related exploratory behaviour and entrepreneurial intention, which supported Hypotheses 4b and 4c, respectively.

The final results are shown in Table 4.

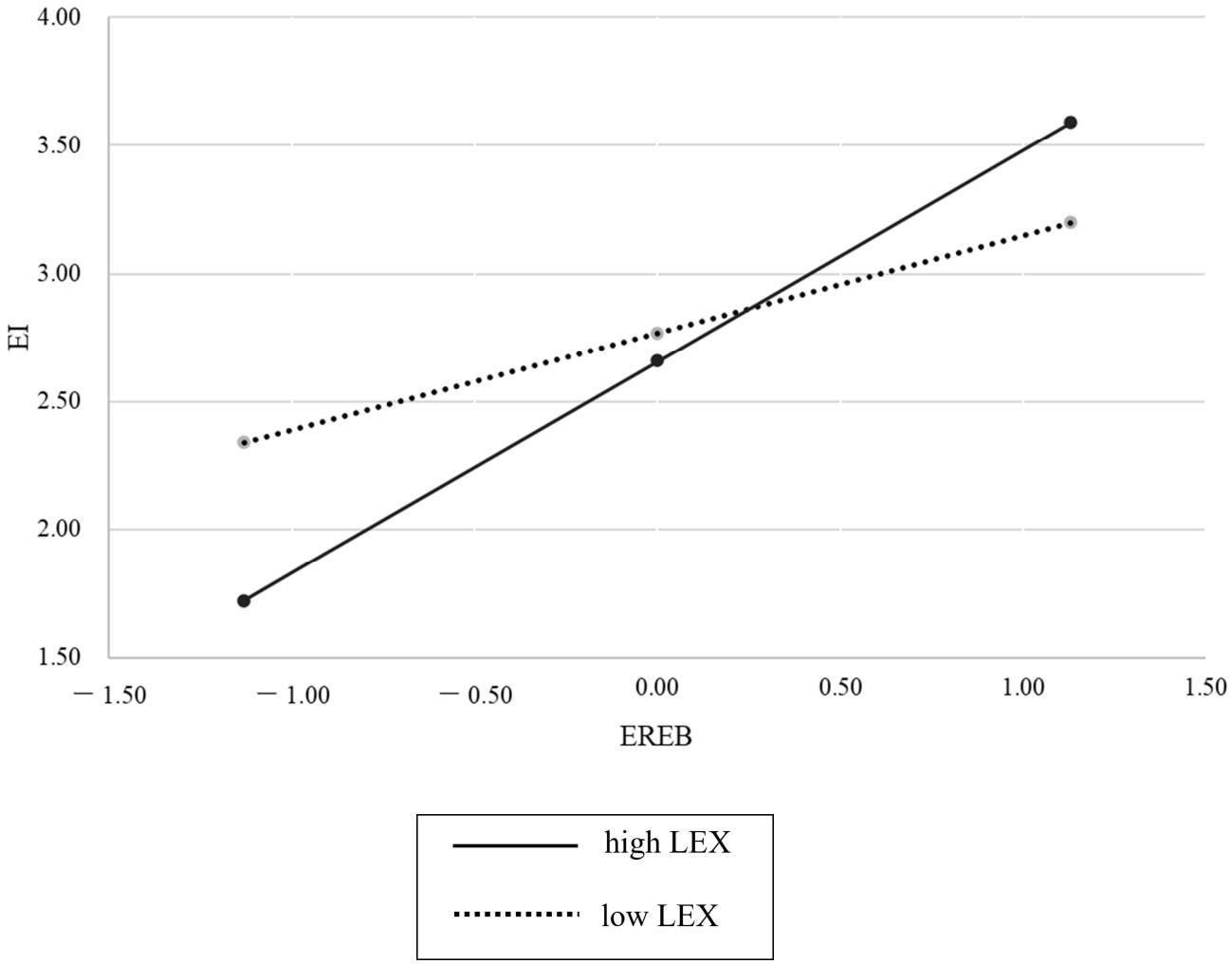


**Figure 3.** Moderating effect of leadership behaviour on the relationship between. entrepreneurship-related exploratory behaviour and entrepreneurial intention. Note. RIP = risk propensity; EREB = entrepreneurship-related exploratory behaviour; EI = entrepreneurial intention; LEX = leadership experience.

**Table 4.** Final results.

| | Hypothesis | Result |
|---|---|---|
| H1a | Risk propensity is negatively related to lifetime employment orientation. | ○ |
| H1b | Risk propensity is positively related to entrepreneurship-related exploratory behaviour. | ○ |
| H2a | Lifetime employment orientation is negatively related to entrepreneurial intention. | ○ |
| H2b | Entrepreneurship-related exploratory behaviour is positively related to entrepreneurial intention. | ○ |
| H3a | Risk propensity indirectly influences entrepreneurial intention by reducing lifetime employment intention. | ○ |
| H3b | Risk propensity indirectly influences entrepreneurial intention by promoting entrepreneurship-related exploratory behaviour. | ○ |
| H4a | Leadership experience moderates the negative relationship between lifetime employment orientation and entrepreneurial intention, such that the relationship is weaker for students with more leadership experience. | × |
| H4b | Leadership experience moderates the positive relationship between risk propensity and entrepreneurship-related exploratory behaviour, such that the relationship is stronger for students with more leadership experience. | ○ |
| H4c | Leadership experience moderates the positive relationship between entrepreneurship-related exploratory behaviour and entrepreneurial intention, such that the relationship is stronger for students with more leadership experience. | ○ |

### 5.5. Other Results

Some relationships not included in the hypotheses were also confirmed. First, risk propensity had a direct positive effect on entrepreneurial intention (B = 0.32, SE = 0.10, $t$ = 3.23, $p < 0.01$, CI = [0.12, 0.51]). In addition, male gender had a negative effect on entrepreneurship-related exploratory behaviour (B = −0.52, SE = 0.19, $t$ = 2.69, $p < 0.01$, CI = [−0.90, −0.14]), indicating that women had a high level of entrepreneurship-related exploratory behaviour. On the other hand, male gender had a positive effect on entrepreneurial intention (B = 0.52, SE = 0.23, $t$ = 2.23, $p < 0.05$, CI = [0.06, 0.97]), indicating that men have a high level of entrepreneurial intention.

## 6. Discussion

### 6.1. Our Findings

The study's main objective was to model the determinants and process of entrepreneurial intention development among Japanese students given the unique context of Japan. In addition, we applied the HLT career theory to understand the entrepreneurial process. Against this background, we modelled the process by which the risk propensity of students influenced their lifetime employment orientation and entrepreneurship-related exploratory behaviour, which, in turn, leads to entrepreneurial intention. The results supported the model and demonstrated that the process of risk propensity influenced entrepreneurial intention through entrepreneurship-related exploratory behaviour and the degree of leadership experience of the students.

### 6.2. Theoretical Implications

One of the theoretical contributions of this study is that it is one of the few empirical studies on entrepreneurship using HLT. Although empirical studies on HLT were conducted on the career decisions of students (e.g., Ahn et al. 2015), to the best of our knowledge, this study was the first to examine the application of HLT to an empirical study of entrepreneurship. Moreover, although both exploration and skills are important concepts (Kim et al. 2014), less attention has been paid to exploration in quantitative research compared to skills. We showed that HLT is also a useful framework for improving entrepreneurship by also focusing on exploration as a type of informal entrepreneurial learning. The results indicated that the process by which certain individual characteristics (i.e., risk propensity) influenced the increase in entrepreneurial intention may differ across different national and regional contexts. For example, in countries such as Japan in which the development of entrepreneurship education is insufficient, assuming that risk propensity indirectly fosters the entrepreneurial intention of students through the process of chance encounters instead of risk propensity directly fostering entrepreneurial intention is reasonable. We only analysed a sample of Japanese students, and the results indicated that HLT was suitable for understanding the entrepreneurial process in specific contexts. The most studied theory on entrepreneurial intention is the TPB (Kautonen et al. 2015). However, our application of HLT to the study of entrepreneurial intention provided another perspective for investigating entrepreneurial intention for researchers.

In addition, the process by which lifetime employment orientation mediates the relationship between risk propensity and entrepreneurial intention reflects Japan's unique employment environment. For this reason, examining the different processes that reflect the employment situation in other countries and regions in terms of entrepreneurial intention will be interesting to study in the future.

Additionally, we found a moderating effect of leadership experience, which implied that a number of young people (students with more leadership experience) more frequently engaged in such a process and were attracted to chance encounters with experienced entrepreneurs and entrepreneurship-related learning opportunities. Our results were consistent with the existing research that showed that leadership experience enhanced the motivation to lead people (Bergner et al. 2019; Chan and Drasgow 2001) and our study incorporated leadership experience into entrepreneurship research.

### *6.3. Practical Implications*

The study also provides important implications for educators and policymakers. First, considering the low entrepreneurship rate in Japan, policymakers can design career counselling services that can guide students to be more open to new experiences and to learn from serendipitous events because they could lead to entrepreneurial opportunities (Vo et al. 2021).

Additionally, HLT is based on the idea that every planned and unplanned event is an opportunity for learning (Krumboltz et al. 2013). Therefore, universities can develop extracurricular activities where students are exposed to unexpected events such as cross-departmental collaborations (Padilla-Angulo 2019; Sim et al. 2023).

In addition, our results showed a gender difference in the process of entrepreneurship. Our results suggested that female students had high levels of entrepreneurship-related exploratory behaviour, but low levels of entrepreneurial intention. In particular in Japan, where masculinity has also been found to be high in the national culture dimensions (Minkov et al. 2010), it may not be sufficient to encourage exploratory behaviour, and it may be important to encourage more female entrepreneurs through other means, including increasing opportunities to obtain leadership experience.

Finally, trying to change attitudes toward risk is another way to enhance entrepreneurship. We propose that encouraging exploratory behaviour based on the HLT and increasing chance encounters with experienced entrepreneurs and entrepreneurship-related learning opportunities for students are important aspects for expanding entrepreneurship career options. An individual's risk propensity may change (Simon et al. 2000), thus, we expect that enhancing risk propensity among young people in Japan will promote entrepreneurship-related exploratory behaviour. This approach will also expand the career options of women, especially those who may have experienced career interruption due to childcare or discrimination and who are seeking an alternate career in entrepreneurship (Ascher 2012).

### *6.4. Limitations and Future Research Directions*

This study had its limitations. First, the construct of entrepreneurship-related exploratory behaviour was newly conceptualised and used in the analysis as a unidimensional variable because we did not observe the assumed two sub-dimensions. In addition, the psychometric properties of this measurement were not fully tested. Thus, future empirical studies with a high methodological validity could develop this construct for future use in entrepreneurship research. Second, the current study was cross-sectional, which raises generalizability concerns. In the future, conducting longitudinal data collection would be desirable to monitor the process of entrepreneurial intention in an accurate and appropriate manner. Third, to conduct our study, the data were only collected from one class of one Japanese university. Thus, the possibility exists that factors that influence entrepreneurial intention may differ depending on the faculties of the students. In the future, comparing the data collected from different universities and departments could yield interesting results. Another interesting avenue for future research is replicating the research in countries similar to Japan. Lastly, although this study has the significance of applying HLT to entrepreneurship, it only focused on risk propensity among the five happenstance skills. Future research should investigate how other happenstance skills can be involved in enhancing students' entrepreneurship.

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**Data Availability Statement:** The data used in this study are available from the corresponding author upon reasonable request.

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