“Role of individual entrepreneurial orientation and innovation in SME performance: Gender perspectives”

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ROLE OF INDIVIDUAL ENTREPRENEURIAL ORIENTATION AND INNOVATION IN SME PERFORMANCE: GENDER PERSPECTIVES

Abstract

Individual entrepreneurial orientation and innovation are essentials for small and medium enterprises (SMEs) to drive their performance, including surviving or even growing during economic crises. The entrepreneur's gender might have an impact on those relationships. Hence, this study aims to analyze whether there were some differences in the five dimensions of individual entrepreneurial orientation and differences in the influence of individual entrepreneurial orientation and innovation on performance between male and female entrepreneurs. The study was performed through an online survey of 352 SME owners in Indonesia. Structural equation modeling (SEM) and multi-group analysis were conducted to test the hypotheses. The results demonstrated that all dimensions of individual entrepreneurial orientation are valid for developing this construct, but only the risk-taking dimension distinguishes male and female entrepreneurs the most. Male entrepreneurs are more willing to take risks than female. Furthermore, individual entrepreneurial orientation affects performance mediated by innovation, and this effect is not different between male and female entrepreneurs. These findings enrich the literature on the impact of gender on entrepreneurial orientation and the influence of innovation on SME performance. In Indonesia, individual entrepreneurial orientation affects performance assisted by innovation; however, this influence is not different for SMEs managed by male and female entrepreneurs.

Keywords entrepreneurial orientation, innovation, performance, gender, crisis, SME

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INTRODUCTION

In many countries, small and medium enterprises (SMEs) are the backbones of the economy. When an external crisis hits, such as the COVID-19 outbreak, SMEs are the businesses affected the most (Eggers, 2020). Some studies showed entrepreneurial orientation (Abu-Rumman et al., 2021; Fang et al., 2022; Fellnhofer et al., 2016) and innovation as the important factors that directly drive SME performance (Barber et al., 2024; Fang et al., 2022). Although individual characteristics of male and female owners can make their entrepreneurial orientation levels different (Moudry & Thaichon, 2020; Wang et al., 2019), its impact on performance is also found to differ based on the gender of the owner of hotel and family business in Indonesia (Rachmawati et al., 2022).

In Indonesia, SMEs survived and even grew in the 1998 and 2008 economic crises (Meutia et al., 2018). However, the COVID-19 pandemic is different, as 98% or around 63 million SMEs in Indonesia were significantly affected, especially in sales (Widyaningrum, 2020). In terms of gender, 60% of 67.4 million SMEs are female-owned, with a total

contribution of 9.17% to the GDP and a 5% contribution to exports (Fajar, 2019). Moreover, 42% of women entrepreneurs are turning to digital business models, 37% are developing their business areas, and 34% have identified new business opportunities since the pandemic (Mastercard Index of Women Entrepreneurs, 2020). The desire to transform and be agile has strengthened the resilience of women entrepreneurs in facing the crisis, which has certainly helped their business recovery. The challenges for female entrepreneurs include self-doubt about their potential as entrepreneurs, a lack of ability to develop a business network, a lack of awareness in capturing business opportunities, and limited capital (Gosta, 2017). Female SME entrepreneurs are also still limited in innovations (Chatterjee & Ramu, 2018). Likewise, the study from Smeru Institute and Monash University found that due to pandemic crisis in Indonesia more women business owners of SMEs experienced declining sales and rising production costs compared to their male counterparts, and more than 60% of women-owned SMEs reported difficulty obtaining funding due to high repayment risks, high interest rates, and too many outstanding loans, also reported difficulties in establishing a balance between business work and domestic duties, confirming the double burden experienced by women in daily life (Fillaili et al., 2022). Orientation and entrepreneurial skills are the main hurdles female SME entrepreneurs face, which may affect their business growth.

Previous research studied the relationship between entrepreneurial orientation, innovation, and performance, as well as gender differences in entrepreneurial orientation and the moderating role of gender in the relationship between entrepreneurial orientation and performance. Comprehensively studying the role of gender in explaining the relationship among entrepreneurial orientation directly or indirectly through innovation in building performance is necessary to comprehend the impact of gender on SME performance during the pandemic.

1. LITERATURE REVIEW AND HYPOTHESES

Female entrepreneurs affect their families by providing various alternative supplemental income and the community by making wider use of valuable assets (Batjargal et al., 2019). In fact, some female entrepreneurs have reacted and adapted to the COVID-19 outbreak by adjusting their business model to meet the changes in consumer behavior and local or global needs. Nevertheless, there are still many challenges faced by female SME entrepreneurs, for example, a lack of education, experience, and training; low entrepreneurial skills; limited capital; limited access to knowledge and technology; operational inefficiencies; a lack of family support; and many more (Chatterjee & Ramu, 2018).

Entrepreneurial orientation and marketing orientation were the keys to surviving the crisis for SME owners (Eggers, 2020). Basically, entrepreneurial orientation comprises three dimensions: innovativeness, proactiveness, and risk-taking (Miller, 1983; Covin & Slevin, 1989). Innovation is finding creative solutions for problems, unlike usual solutions. In addition, sometimes innovations need new technology, a new process, or new products and services. Risk-taking is the willingness to commit to allocating resources even though there is a chance of moderate and calculable mistakes. Lastly, proactiveness is the willingness to find opportunities, with the characteristics of being resilient, easily adaptable, and ready to take responsibility for mistakes made (Morris & Lewis, 1995). Owners who are innovative, able to create new offers to fulfill the consumers' needs and wants based on existing opportunities, and capable of managing business risk will be able to help their businesses survive the crisis. Entrepreneurial orientation has been proven to be an influential factor that saved SMEs' performance during the financial crisis in Greece (Kottika et al., 2020) and the global economic crisis (Soininen et al., 2012). Entrepreneurs also need entrepreneurial orientation during uncertain and hard times (Alvi, 2021). In recession, the innovativeness and proactiveness dimensions of entrepreneurial orientation were demonstrated to have a positive impact on SMEs' performance, but risk-taking had the opposite effect (Soininen et al., 2012).

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As a strategic orientation, entrepreneurial orientation can exist at the organizational and individual levels (Ferreira et al., 2016). Alvi (2021) found an individual rather than firm-level entrepreneurial orientation in an international context. Employees who have new ideas and technology, embrace opportunity, dare to take risks, or show initiative or competence in some other ways are employees with entrepreneurial orientation (Lee & Peterson, 2000). Therefore, individual entrepreneur orientation can be defined as the tendency of an individual in an organization to act and behave in an innovative, proactive, and risk-taking manner (Covin et al., 2020). When considering entrepreneurial orientation at the individual level, the personal characteristics or attitudes of an entrepreneur that can bring success to emerge, especially risk-taking, innovativeness, autonomy, and proactiveness, will be useful in building the dimensions of individual entrepreneur orientation (Bolton & Lane, 2012).

The dimensions of individual entrepreneur orientation are similar to those of entrepreneur orientation, namely innovativeness, proactiveness, and risk-taking. At the individual level, innovativeness is the ability of an individual to create new work solutions; proactiveness is an individual act to anticipate and respond to the opportunity of creating new values; and risk-taking is the willingness to finish a task or make some decisions with uncertain results (Covin et al., 2020). Santos et al. (2020) added two more significant dimensions to the elements of individual entrepreneur orientation: perseverance and passion. Entrepreneurial perseverance is the willingness of an individual to act continuously despite the conditions that the person must face. It is also related to goal-oriented acts and the level of energy when facing hurdles (Baum & Locke, 2004). Perseverance is related to the fight to achieve the ongoing objectives despite the difficulties, and the results might strongly affect the longevity of the company (Santos et al., 2020). Entrepreneurial passion is the basic emotional component that is needed to be successful in business (Santos et al., 2020). Passion is the determinant component for entrepreneurial success, but passion cannot stand on its own. Even though a person is passionate about becoming an entrepreneur, without the skills needed to do the business, it most likely will be a failure (Gerschewski et al., 2016).

When focusing on an individual level, the gender of SME entrepreneurs might have a role in developing individual entrepreneur orientation (Covin & Miller, 2014; Hmieleski & Sheppard, 2019); male entrepreneurs have a significantly higher level of individual entrepreneur orientation compared to females (Fellnhofer et al., 2016; Ladd et al., 2019; Moudry & Thaichon, 2020; Wang et al., 2019). Even in college, male students tend to have a higher entrepreneurial orientation compared to female students (Goktan & Gupta, 2015; Kumar et al., 2021). However, several studies show no difference between male and female entrepreneurs regarding entrepreneur orientation perceptions, even though female entrepreneurs tend to exhibit lower entrepreneur orientation (Ayub et al., 2013). Unfortunately, those studies did not discuss the differences in the dimensions level of individual entrepreneur orientation.

Individual entrepreneur orientation can have a direct effect on performance (Basco et al., 2020) and make SME or a new company perform better than its competitors and boost its performance (Li et al., 2009). Dimensions of individual entrepreneur orientation, namely innovative, proactive, and risk-taking traits, can show a comparative advantage and strong performance (Ali et al., 2020). The performance is measured by the growth and profitability of companies and can be measured based on companies' perceptions toward their main competitors. These performance perceptions have shown reliable and valid results and can be used for empirical research (Dess & Robinson, 1984), and it was sufficient to measure SMEs' performance empirically (Sok et al., 2013). Morgan et al. (2009) developed an instrument to measure SMEs' performance based on perceptions in the SME context.

Gender linkages in the relationship between entrepreneur orientation and SME performance have had mixed results. SMEs led by women entrepreneurs were proven to have higher performance than their male counterparts due to a higher perception of their entrepreneur orientation (Neneh et al., 2016). However, the performance of SMEs led by male entrepreneurs in Spain was shown to be higher than that of women (Butkouskaya et al., 2020). Moreover, some studies substantiate that there is no gender impact on the relationship be-

tween entrepreneur orientation and performance, although entrepreneur orientation is perceived differently between male and female entrepreneurs (Butkouskaya et al., 2020; Fellnhofer et al., 2016). In other words, studies related to gender relations with SME performance still have the potential to be carried out (Fellnhofer et al., 2016).

Innovations are classified as incremental (the expansion of product lines or alterations of existing products) and radical (absolutely new products in the market) (Gunjati & Adake, 2020). In SMEs, innovation is an important factor in facilitating growth, offering new products with higher potential profits, and improving the whole market value (Wiklund et al., 2009). SMEs can leverage innovativeness to improve creativity in the product development process so that the product offerings can fulfill the needs and wants of the target market more effectively. Various studies have proved a positive relationship between new product introductions (closely related to innovations) and organizational performance (Kreiser et al., 2013).

Regarding women entrepreneurship, Idris (2008) discovered relationships between the innovations of female entrepreneurs based on their age, education, location, type of business, annual income, and number of employees. An experimental study on 178 college students proved that innovations in business models are stronger and have positive impacts on female students' entrepreneurship compared to male students (Thébaud, 2015). Meanwhile, in Norway, Ljunggreen et al. (2010) discovered that the existing studies on innovations are strongly related to males. They suggested that the future research agenda must focus on the relationship between gender and innovations since this might contribute to the study of innovations itself.

Based on this literature review, entrepreneurial orientation is the key to surviving the crisis for SME owners (Eggers, 2020). Previous studies focus more on how entrepreneurial orientation could directly impact performance (Abu-Rumman et al., 2021; Fang et al., 2022; Rachmawati et al., 2022; Santos et al., 2020), or direct impact on innovation (Oduro, 2022; Rachmawati et al., 2022). In addition, there were some studies examining the differential level of entrepreneurial orientation among genders (Zimmerman & Brouthers, 2012; Ayub et al., 2013; Lim & Envick, 2013).

Therefore, this study aims to investigate the differences in individual entrepreneurial orientation among SME owners by gender. Moreover, it also checks the gender impact on the relationship between individual entrepreneurial orientation, innovation, and performance. Thus, the following hypotheses were proposed:

H_1: *There is a difference in the roles of the five dimensions in forming individual entrepreneurial orientation between male and female entrepreneurs.*

H_2: *The positive influence of individual entrepreneurial orientation toward SME performance is different between male and female entrepreneurs.*

H_3: *The mediation effect of innovation in the relationship between individual entrepreneurial orientation and performance is different between male and female entrepreneurs.*

2. METHOD

There are two independent variables, individual entrepreneurial orientation and innovation, that affect SME performance as the dependent variable. Figure 1 shows the research model.

The research questionnaire comprised 34 items for three latent variables in this study. Individual entrepreneurial orientation was a formative second-order latent variable that had 17 items classified into five reflective first-order latent dimensions: risk-taking, innovativeness, proactiveness, passion, and perseverance. These measurements were adapted from Santos et al. (2020). Other variables were measured as reflective latent. The innovation variable had six items taken from Chege and Wang (2020). Lastly, the SME performance variable contained four modified items (Morgan et al., 2009; Sok et al., 2013). Every item used a five-point Likert scale, with 1 equal to strongly disagree and 5 equal to strongly agree. All items can be seen in Appendix A.

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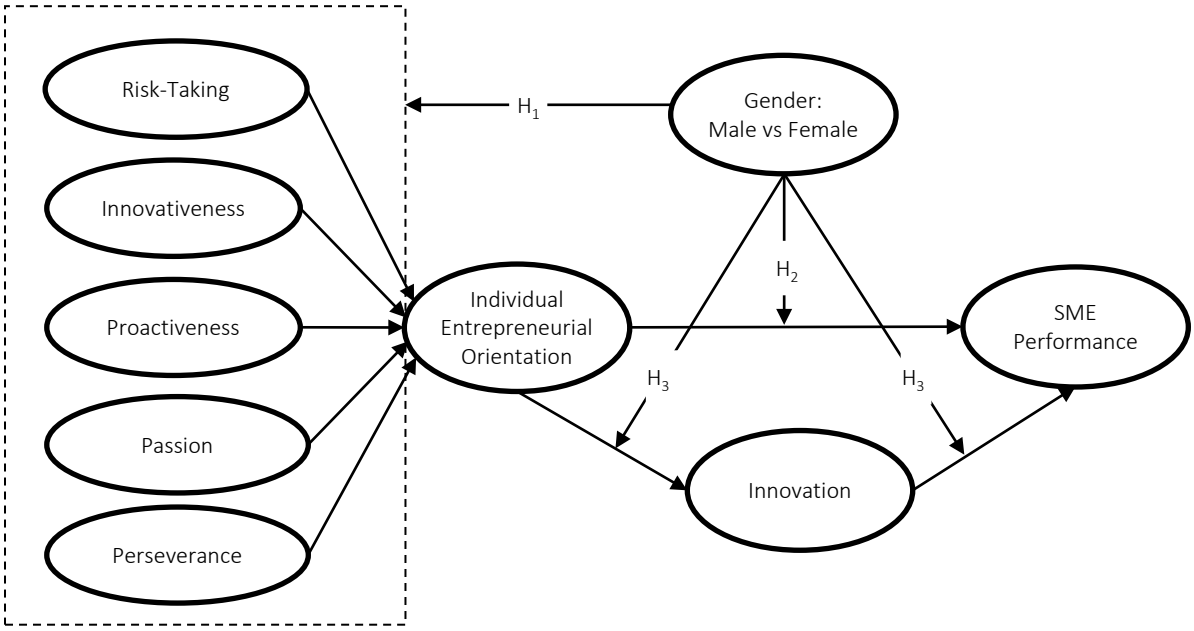

Figure 1. Conceptual model

Partial least squares structural equation modeling (PLS-SEM) was performed to assess the proposed model and hypotheses using Smart-PLS 3.0 software. PLS-SEM was chosen due to the probability of a second-order construct (Hair et al., 2017). Afterward, a multi-group analysis was performed on the groups of male and female entrepreneurs.

The respondents were SME owners, with criteria taken from an Indonesian law (Act No. 20 of 2008): to be considered as an SME, the maximum asset value should be 10 billion rupiahs, or the maximum annual sales should be 50 billion rupiahs. The respondents were business owners who joined the platform of UKM Indonesia.id, an online platform for SMEs. The data were collected online using email blasts to all 2,000 members of the UKM Indonesia.id platform. The number of questionnaires answered was 380, which means a 19% response rate.

After data validation and cleansing, there were only 352 valid responses, comprised of 180 male (51.2%) and 172 female business owners (48.8%). The majority were under 40 (68.9%), and the rest were 40 years old and above (31.1%). Around 56.9% of the respondents were university graduates, while the rest (43.1%) were not. Most of the businesses owned by both male and female entrepreneurs were in the primary industry sector (farming, fishery, food, and beverages) (Table 1).

Table 1. General sample information

Indicator		Male		Female	
		N	%	N	%
Age	≤ 41 years	132	73.3	111	64.5
	> 41 years	48	26.7	61	35.5
Education	No university degree	76	42.2	76	44.2
	University degree	104	57.8	96	55.8
Industry sector	Primary	103	57.2	111	64.5
	Manufacturing	30	16.7	34	19.8
	Services	47	26.1	27	15.7
Number of employees	≤ 10	173	96	160	93
	> 10	7	4	12	7

3. RESULTS

Reliability and validity checks were performed separately for male and female respondents. All latent variables are considered reliable, with Cronbach's alpha scores of 0.6 or higher and composite reliability (CR) scores of 0.7 or higher (Hair et al., 2014). Next, for the convergent validity, average variance extracted (AVE) scores of 0.50 or higher and outer loading scores of between 0.4-0.7 mean that all the items are valid (Hair et al., 2014). Table 2 presents the complete results for the tests. As for the discriminant reliability (Fornell & Larcker, 1981), all the variables are 0.7 or higher, as shown in Table 3.

Table 2. Reliability and convergent validity

Variable/ Dimension	Item	Male				Female			
		Outer Loading	AVE	Cronbach's Alpha	CR	Outer Loading	AVE	Cronbach's Alpha	CR
Individual Entrepreneurial Orientation				**0.891**	**0.907**			**0.878**	**0.898**
Risk-taking	IEO1	0.781	0.645	0.728	0.845	0.584	0.507	0.719	0.841
	IEO2	0.809				0.828			
	IEO3	0.818				0.704			
Innovativeness	IEO4	0.795	0.602	0.670	0.819	0.783	0.577	0.833	0.878
	IEO5	0.790				0.789			
	IEO6	0.742				0.752			
Proactiveness	IEO7	0.831	0.633	0.709	0.838	0.816	0.64	0.784	0.853
	IEO8	0.804				0.728			
	IEO9	0.749				0.850			
Passion	IEO10	0.724	0.589	0.650	0.811	0.736	0.627	0.875	0.914
	IEO11	0.776				0.813			
	IEO12	0.801				0.824			
Perseverance	IEO13	0.616	0.543	0.786	0.845	0.657	0.537	0.702	0.834
	IEO14	0.672				0.776			
	IEO15	0.818				0.765			
	IEO16	0.791				0.736			
	IEO17	0.767				0.752			
Innovation	INO1	0.650	0.522	0.816	0.867	0.738	0.547	0.833	0.878
	INO2	0.699				0.657			
	INO3	0.722				0.759			
	INO4	0.787				0.794			
	INO5	0.717				0.772			
	INO6	0.752				0.709			
SME Performance	PER1	0.819	0.795	0.913	0.939	0.823	0.726	0.635	0.804
	PER2	0.926				0.871			
	PER3	0.908				0.863			
	PER4	0.908				0.852			

Table 3. Discriminant validity

Dimensions	Male					Female				
	1	2	3	4	5	1	2	3	4	5
Risk-taking	0.803					0.712				
Innovativeness		0.776					0.760			
Proactiveness			0.795					0.800		
Passion				0.768					0.792	
Perseverance					0.737					0.733

Next, a structural analysis with 5,000 subsample bootstraps was performed. Considering individual entrepreneurial orientation as the second-order formative latent variable, first, the data analysis focused on the individual entrepreneurial orientation dimensions. The results for all dimensions for both males and females showed a *t*-value > 1.98. For both the male and female samples, perseverance was the strongest contributor to individual entrepreneurial orientation (the highest estimate value), and passion was the weakest dimension for the male samples (0.188; 10.822). For the female samples, the weakest contributor was risk-taking (0.149; 6.926), which was different from the male samples, which had the lowest score in passion (Table 4).

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Table 4. Analysis of the individual entrepreneurial orientation as the second-order construct

Dimension	Male		Female	
	ß	t-value	ß	t-value
Risk-taking	0.230	11.724	0.149	6.926
Innovativeness	0.242	13.653	0.206	9.676
Proactiveness	0.242	14.864	0.265	14.184
Passion	0.188	10.822	0.234	12.518
Perseverance	0.367	15.812	0.411	16.581

Table 5 shows the descriptive mean difference (independent sample *t*-test) between male and female entrepreneurs. All dimensions have no significant mean difference between male and female entrepreneurs (*t*-stat < *t*-critical).

Table 5. Descriptive mean difference t-test

Indicator	Mean		T-test	
	Male	Female	t-value	t-table
Risk-taking	3.84	3.71	1.45	1.98
Innovativeness	4.04	3.95	1.19	
Proactiveness	4.35	4.22	0.66	
Passion	4.51	4.4	1.83	
Perseverance	4.23	4.17	1.03	
Innovations	3.85	3.91	−0.68	
Performance	3.51	3.57	−0.6	

The next step was to perform a structural model analysis for each respondent group. The results showed that the path coefficients for both male and female samples were very similar (Table 6).

The path of individual entrepreneurial orientation to SME performance for both groups of samples was insignificant, with a *t*-value < 1.98 (for males: *t*-value = 1.413, *p*-value 0.158; for females: *t*-value = 1.238, *p*-value = 0.216), which means this direct path was not significant for both groups of samples (male and female entrepreneurs). Next, the mediation effect of innovation in the relationship between individual entrepreneurial orientation and SME performance indicates significant values for both groups of samples (for males: *t*-value = 3.563, *p*-value = 0.00; for females: *t*-value = 4.829, *p*-value = 0.00). This means that the path between individual entrepreneurial orientation toward SME performance was significantly mediated by innovation for both groups of samples (male and female entrepreneurs). Furthermore, based on the estimated value (β), the mediation relationship is higher in the female group than in the male group. Thus, the role of innovation in mediating the relationship between individual entrepreneurial orientation and SME performance is higher for female than male entrepreneurs.

Table 6 shows differences in the paths of the model, but to ensure that the differences were significantly different (to test the hypotheses), a multi-group analysis between the male and female groups was performed.

Table 7. Multi-group analysis (male vs. female)

Paths	ß	p-value
Risk-taking → IEO	0.081	0.005*
Innovativeness → IEO	0.036	0.185
Proactiveness → IEO	0.024	0.340
Passion → IEO	0.045	0.076
Perseverance → IEO	0.044	0.201
IEO → PER	0.006	0.959
IEO → INO	0.063	0.346
INO → PER	0.102	0.471

Note: IEO = individual entrepreneurial orientation; PER = SME performance; INO = innovation.

As can be seen in Table 7, only the path of risk-taking dimension (0.081; 0.005) has significant value; other paths (innovativeness, proactiveness, passion, and perseverance) in developing individual entrepreneurial orientation between the male and female groups of samples are not significant, which means that H_1 is partially supported. Moreover, although in both samples, there was a mediation effect of innovation (Table 6), all the comparison paths among constructs between

Table 6. Path coefficients

Paths	Male			Female		
	ß	t-value	p-value	ß	t-value	p-value
IEO → PER	0.137	1.413	0.158	0.131	1.238	0.216
IEO → INO	0.687	17.834	0.000*	0.624	11.495	0.000*
INO → PER	0.407	3.863	0.000*	0.509	5.250	0.000*
IEO → INO → PER	0.286	3.563	0.000*	0.323	4.829	0.000*

Note: IEO = individual entrepreneurial orientation; PER = SME performance; INO = innovation. * means significance.

males and females were not significant. This means that H_2 and H_3 are rejected, as there are no significant differences in the relationship between individual entrepreneurial orientation, innovation, and SME performance between male and female entrepreneurs.

4. DISCUSSION

As can be seen in Table 4, for both samples (male and female), all of the five dimensions have a positive and significant value in developing individual entrepreneurial orientation. Perseverance was the strongest contributing dimension of the individual entrepreneurial orientation construct both for male and female entrepreneurs. Perseverance is related to the persistence of an individual to do something despite the difficulties or delays in achieving success (Markman et al., 2005). Proactiveness and innovativeness were the second and third contributing dimensions of the individual entrepreneurial orientation construct for male entrepreneurs, while proactiveness and passion were the second and third dimensions for female entrepreneurs. Based on these results, all five dimensions have significant roles in developing individual entrepreneurial orientation for both male and female entrepreneurs. These results are similar to those of Santos et al. (2020) but show different results in terms of the magnitude of the role of the five dimensions of individual entrepreneurial orientation (as this study measured individual entrepreneurial orientation as the second-order construct).

Only the risk-taking dimension differed in building individual entrepreneurial orientation between males and females (Table 7). The risk-taking estimate score for male SME owners was significantly higher than for female entrepreneurs (ß: 0.230 > 0.149). This result shows that male entrepreneurs tend to be more ready to take risks compared to their female counterparts. In accordance with Cesaroni et al. (2015), female entrepreneurs tend to deal with a crisis with a defensive attitude; they are less likely to take a risk in managing their business, and they prefer to reduce their business activities and increase efficiency in an economic crisis. Similarly, Lim and Envick (2013) showed that females are more likely to do business at low risk and with low returns.

Therefore, in Indonesia, under the conditions of the outbreak, the risk-taking dimension is a significant differentiator in the role of the individual entrepreneurial orientation dimensions for both male and female SME entrepreneurs, where risk-taking is higher among males. Even though there is no significant difference, female entrepreneurs in this sample demonstrated a higher contribution of perseverance dimension in constructing individual entrepreneurial orientation. The low level of fighting power of female entrepreneurs in facing the risks of managing SMEs in Indonesia may be because females are not the main breadwinners, so they only run businesses to support the family income. . In 2023, female's contribution to family income was only 37.09% (Indonesia Central Bureau of Statistics, 2024).

Even though all dimensions have no significant mean difference between male and female entrepreneurs, the mean score of male entrepreneurs for all individual entrepreneurial orientation dimensions is higher than that of female entrepreneurs. This result is in line with Exposito et al. (2023), who also found no gender differences in organizational innovations; however, male owners tend to proceed with innovation in their businesses. Lim and Envick (2013) also stated that male entrepreneurs tend to score higher in risk-taking and innovativeness orientations and compete more aggressively compared to female business owners. The findings of this study are also similar to the results of Fellnhofer et al. (2016) without specific regard to a certain dimension, as male entrepreneurs have higher individual entrepreneurial orientation compared to female entrepreneurs (Goktan & Gupta, 2015; Fellnhofer et al., 2016).

Although in this study, the individual entrepreneurial orientation did not have a direct effect on SME performance, it still holds an important role. Individual entrepreneurial orientation affects the innovation behavior of SME performance, which influences SME performance indirectly. Moreover, the effect is also not different for both male and female entrepreneurs. This result is similar to Isichei et al. (2020), who found that each individual entrepreneurial orientation dimension has different direct effects on SME performance; innovativeness and proactiveness have significant direct effects, but risk-taking showed no significant effect on SME performance.

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The results contradict previous research that showed a positive and significant direct influence of individual entrepreneurial orientation on SME performance (Ali et al., 2020; Basco et al., 2020; Dwumah et al., 2024). The differences in the results are due to the context of this study. In a pandemic situation, disruptive changes in the environment occur globally and affect human life adversely. This situation influences all businesses not only at the industry level but also at the macro level. The results demonstrated that as individual characteristics (Covin et al., 2020; Lee & Peterson, 2000), individual entrepreneurial orientation alone is not enough to affect performance. The characteristics of the pandemic that deliver a direct impact on human safety may also affect the SME owner as an individual, not just as a business owner.

Entrepreneurial orientation and innovation are closely linked, and business owners are expected to not only possess entrepreneurial orientation but also to translate or transform this orientation into various innovation activities. Innovation activities, whether they are technological, product, marketing process-related, or managerial, are proven to boost the performance of entrepreneurial firms (Barber et al., 2024; Fang et al., 2022). This study proved the important role of innovation in boosting SME performance. Innovation has a direct effect and also mediates the effect of individual entrepreneurial orientation on SME performance. The result is similar to previous studies (Sawaean & Ali, 2020; Ince et al., 2023; Al-Hakimi et al., 2021). The relationship between individual entrepreneurial orientation and SME performance is also conditional on the level of innovativeness (Putniņš & Sauka, 2020). Majali et al. (2022) also found that green product innovation has significant effects on sustainability. This study strengthens the importance of individual entrepreneurial orientation to drive performance through innovation. In an economic crisis, the role of innovation is even stronger, and the ability to innovate is essential to SME survival during a crisis (El Caarani et al., 2022).

CONCLUSION

As a strategic orientation at the organizational and individual levels, entrepreneurial orientation is the key to surviving the crisis for SME owners. This study aimed to investigate the differences in individual entrepreneurial orientation among SME owners' genders and further analyze how gender impacted the direct influence of individual entrepreneurial orientation on performance through the mediating effect of innovation on that relationship.

The results showed that during the outbreak, firstly, in both samples (male and female entrepreneurs), all dimensions developed individual entrepreneurial orientation. However, risk-taking is the only dimension that differs significantly between male and female entrepreneurs. Male entrepreneurs tend to embrace more risks compared to their female counterparts. Secondly, in both samples, individual entrepreneurial orientation did not have a direct effect on SME performance, but it had to be mediated by innovation. Therefore, the role of individual entrepreneurial orientation is still significantly important to increase SME performance. This result shows that SME owners have to broaden their views and knowledge regarding entrepreneurial orientation; for example, they could follow entrepreneurship education programs. SME owners also must learn how to perform various innovative actions to survive or even expand their businesses during the outbreak. Nevertheless, there is no difference between male and female entrepreneurs. Lastly, there are no differences between male and female SME entrepreneurs in responding to the relationship between individual entrepreneurial orientation, innovations, and SME performance.

The theoretical contributions of this study are as follows. This study empirically analyzed the latest individual entrepreneurial orientation scale with the addition of passion and perseverance in the building dimensions aside from the three main dimensions and their influence on SME performance. Second, this paper assessed the differences between individual entrepreneurial orientation and innovation and their effects on SME performance between male and female SME entrepreneurs. As for the contextual contributions, this study was conducted during the pandemic crisis.

Limitations of this study can be suggestions for future research. The majority of the respondents were small-scale entrepreneurs from various industry fields. Future research should address mid-scale entrepreneurs or target a certain industry. Similar analyses should also be conducted after the crisis to prove whether individual entrepreneurial orientation, innovation, and SME performance measurements can be generalized for more stable periods. Future studies should also address the type of innovation activities, namely technological innovation, marketing innovation, and managerial innovation, or they can be based on other classifications (incremental and radical innovations). Lastly, future research should measure SME performance based on real sales or profitability data.

AUTHOR CONTRIBUTIONS

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APPENDIX A

Table A1. Measurement items

Dimensions	Code	Items
Risk-taking	IEO1	I like to try something I do not know and make risky decisions
	IEO2	I am willing to invest or spend a lot of time and/or money in something that can give a big return
	IEO3	I tend to act boldly in risky situations
Innovativeness	IEO4	I often try new and unusual activities
	IEO5	In general, I prefer an innovative or new approach to the approach that has been tested or has been used before
	IEO6	When I learn something new, I prefer to try to do it my own way rather than do it like other people do
Proactiveness	IEO7	I usually act to anticipate problems that will arise in the future or the need for change
	IEO8	I tend to plan a project in advance
	IEO9	I prefer to find and do an activity (project) than just sitting and waiting for someone else to do it
Passion	IEO10	I am passionate about gathering the financial, people and social resources (e.g., network contacts and partnerships) I need to create a new business
	IEO11	I have a passion to grow and develop my business
	IEO12	I am passionate about what I do, and when I am away from my place of business, I cannot wait to get back to work
Perseverance	IEO13	I have reached a goal that took me some time to achieve
	IEO14	I have overcome obstacles to achieve greater challenges
	IEO15	I always finish what I start
	IEO16	Obstacles and challenges don't scare me
	IEO17	In my complicated situation, I persevere toward my goal, even though others may give up
Innovation	INO1	I introduce the new product line
	INO2	I invest in producing quality products
	INO3	I use new technology in the production process
	INO4	I use new methods or procedures in producing products or delivering services
	INO5	I have marketed a new product that I have never marketed before
	INO6	My company's market share is increasing due to the new brand for our products
Performance	PER1	My company has better profitability than my closest competitor
	PER2	My company has better sales growth than my closest competitor
	PER3	My company has a higher return on investment than my closest competitor
	PER4	My company has achieved financial goals (such as profit levels and increased sales turnover) compared to my closest competitors

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