The Mediating Effect of Technology Adoption in the Relationship Between Entrepreneurial Orientation and Sustainable Entrepreneurship Values among Fintech Organizations in Malaysia

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Abstract

The objective of this paper is to examine the mediating role of technology adoption (TA) in the relationship between entrepreneurial orientation (EO) and sustainable entrepreneurship values (SEV) among Fintech organizations in Malaysia. The proposed model was evaluated through the utilization of SmartPLS-SEM 4.0.9.9. Information from Fintech organizations in Malaysia was gathered via a self-administered questionnaire. 260 questionnaires out of 294 have been incorporated into statistical analyses. Both EO and TA have favorable and statistically significant benefits on SEV. Furthermore, the impact of EO characteristics (risk-taking, pro-activeness, innovativeness, competitive aggressiveness, and autonomy) on SEV is mediated by TA. It is highly suggested that Fintech organizations in Malaysia adopt EO and cultivate the inventive potential that results from it to increase their resilience to Fintech offerings and disruptions. The findings also support and extend both the resource-based view theory and the extended Technology Acceptance Model into a collaborative framework. EO and TA are the resources and capabilities applied in Fintech organizations, with TA being a mediator that stimulates the reflection of that affiliation as examined. This paper has contributed to the extant literature and suggests future studies to extend the study by employing varied methodological analysis.

Keywords: *Technology Adoption, Entrepreneurial Orientation, Sustainability, Entrepreneurship, Fintech, Malaysia*

INTRODUCTION

Throughout the years, the financial industry has been a pioneer in embracing innovative technologies, including the emergence of Fintechs. These companies utilise distributed ledgers (blockchain), smartphones, artificial intelligence (AI), and machine learning (ML), in addition to data analytics, the Internet of Things (IoT), and other similar systems. The implementation of these technologies has fundamentally transformed the operations and customer service of financial institutions.

Fintechs have consistently exhibited a foundational inclination towards innovation and a constructive contribution to sustainability. Fintechs' contribution to the development of policies that facilitate the transition to a low-carbon environment is duly acknowledged by regulators and policymakers. Unique applications in the field of green and sustainable finance include facilitating access to capital markets, promoting risk management, ensuring financial inclusion, and encouraging sustainable consumer behaviour.

In addition, as one of the few domains within the field of entrepreneurship research, EO has been the subject of considerable conceptual and empirical interest. However, limited evidence was found associating EO and Fintech sustainability with TA to create values and benefits. Thus, this warrants an urgent need to examine the mediating role of TA that may influence the association between EO and Fintech sustainability.

LITERATURE REVIEW

Entrepreneurial Orientation

The EO dimensions result organization to differentiate the three different levels of resource of action among Malaysian Fintech organizations. In general, the results reveal that they are willing to take the risk, proactive,

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and given the autonomy to their employees. However, based on the mean score, Malaysian Fintech organizations prioritised proactive entrepreneurial action, followed by the risk-taking, and finally the autonomy.

The proactive level requires the organization to always try to take the initiative in every situation (Hughes & Morgan, 2007). They have also excelled in identifying opportunities, and initiating actions to which other companies respond (Dhliwayo, 2014; Cohen, Bitan, and Mikulincer, 2023; Nasamu, 2023;). This is followed by risk taking which is considered a positive attribute for people in the organization. They are encouraged to take calculated risks with new ideas. Additionally, they emphasize exploration and experimentation for opportunities. Finally, employees in Malaysian Fintech organizations were given the independence to decide for themselves how to do their work. They also were given the freedom to communicate without interference (Al Shehab & Hamdan, 2021; Olayiwola, 2023; Samad, Ahmad and Ismail, 2024).

As a strategic resource of the organizations, the results of this study were aligned with what (Lumpkin & Dess, 2015) that identified EO as the multi-dimensions that confronting Malaysian Fintech organizations. As shown in the results of this study, the appropriate solution to the issues that arise in every business process depends on resources and the ability to act on those resources to deal with the issue of sustainability values in every entrepreneurial activity and achieve competitive advantage. Therefore, in the Fintech industry in Malaysia, it appears that proactiveness is the most important factor in the construction of entrepreneurial sustainability values.

Sustainable Entrepreneurship Values

The idea of profit-maximizing corporations, according to neoliberal thinking, will result in a trickling down of wealth and well-being into society, for example, through the income that employees of these companies can generate. It challenges the narrow definition of a business's purpose, as it is relevant when sustainable enterprises thrive in the SDGs example. SDGs and SEV were related in the concept of either a human or a business where this entity can only thrive within the so-called "sweet spot" that exists between the ecological ceiling and the social foundation.

Belz and Binder (2017) identified five elements that are frequently included in definitions of SEV. Firstly, it is involving the process of identifying, developing, and exploiting opportunities. Second, the triadic relationship inherent in the definition of sustainable development to balance economic, social, and environmental consequences are supported. Third, definitions make mention of the transformative promise to create future goods and services. Fourth, definitions include the source of opportunities, which can be created by resourceful entrepreneurs or discovered by an actor's alertness to a market failure that can be exploited. Fifth, some researchers explicitly state entrepreneurs, who takes advantage of opportunities. Scholars does emphasise the assumption that SEV is a process across definitions.

In general, SEV is an entrepreneurial action mechanism for the sustainability of nature and ecosystems while generating economic and non-economic benefits to investors, entrepreneurs, and societies (Shepherd & Patzelt, 2011). The "role of entrepreneurial action linked to the concept of opportunity recognition is fundamental in the pursuit of sustainability and development" (Pacheco & Payne, 2010; Patzelt, H., & Shepherd, D. A. (2011). SEV is the process of that involve the discovery, creation, or exploitation of future entrepreneurial opportunities by entrepreneurs (Shepherd & Patzelt, 2011; Pinkse & Groot, 2015) that contribute to sustainability by generating social and environmental benefits for others in society (Pinkse & Groot, 2015; Cohen & Winn, 2007; Dean & McMullen, 2007; Venkataraman, 2019).

Technology Adoption

In the field of technology adoption (TA) research, technology acceptance model (TAM) developed by Davis (1989) has received special attention Jaziri and Miralam (2019). The word 'adoption' in this study is used interchangeably with acceptance and usage. TA is defined as a decision to voluntarily accept or adopt new technology; therefore, willingness is a critical factor in the successful of technology adoption (Kamal, Shafiq, & Kakria, 2020).

TA also can be defined as the acceptance, intention to use, integration, and attitude toward the use of new technologies in society (Jaziri & Miralam, 2019; Fernando, Surjandy, Meyliana, & Touriano, 2018). This area has prompted various researchers to propose the TAM to predict the adoption of certain new technologies by measuring usefulness and ease of use (Jaziri & Miralam, 2019). However, the original TAM has limitation, that may fail to capture the main beliefs that influence the attitudes towards current technology (Jaziri & Miralam, 2019).

According to Zhong, Oh, and Moon (2021). PU and PEOU are insufficient to predict the technoloy adoption. Two other extensive factors to consider are perceived trust and perceived risk. Extended TAM of perceived trust and risk could estimate SEV by using a Fintech platform. This determinant has a strong influence on the technology adoption (Fernando et al., 2018). Indeed, previous international studies examines that perceived trust and risk are two critical factors in Fintech adoption (Jaziri & Miralam, 2019). On the other hand, an extended TAM could also impact the leadership decision to use Fintech (Amoako-Gyampah, 2007; Racherla, & Friske, 2012). From this perspective, extended TAM can be considered appropriate to examine the moderating impact of TA in Malaysian Fintech organizations.

In this study, TA is referred to the voluntarily decision to adopt the financial technology in the organization (Jaziri & Miralam, 2019; Kamal et al., 2020; Fernando et al., 2018). Consequently, this paper aims to examine the mediating role of TA in the relationship between EO and SEV among Fintech organizations in Malaysia.

Conceptual Framework

The conceptual framework is depicted in Fig. 1 in order to translate the aforementioned relationship into the hypotheses of this study. EO, TA, and SEV are the three constructs that comprise the conceptual framework which is also served as the theoretical framework of the study. The mediating variable in this study is the TA, whereas the predictor variable is denoted as the EO. The outcome variable is the SEV.
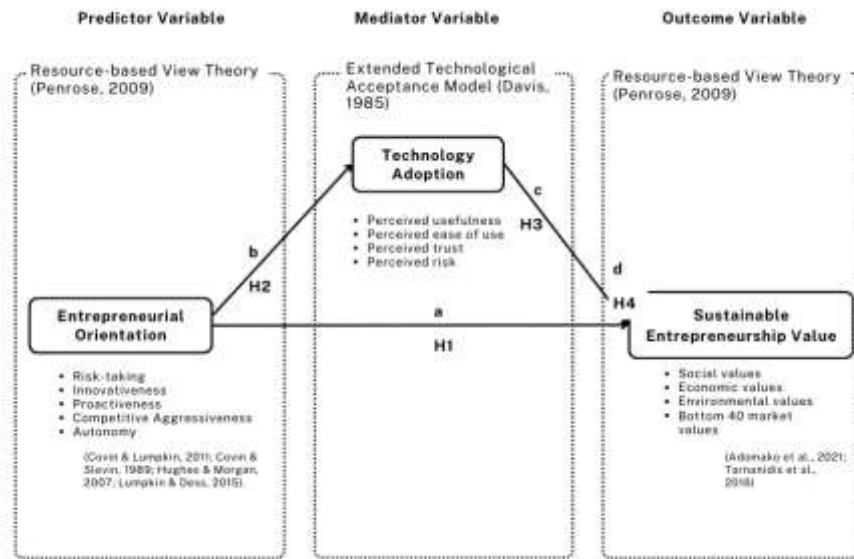

Fig. 1. The Conceptual Framework

Arrow (a) indicates the relationship between the EO and SEV which tested H_1. Arrow (b) indicates the relationship between the EO and TA which tested H_2. In illustrating the extent to which both TA and SEV have good linkages between them, the relationship is indicated by the direction of the arrow (c) which tested H_3. Arrow (d) indicates the TA act as mediator in the relationship between EO and SEV (which tested H_4). Thus, the following highlights the hypothesis of this study:

H₁: there is a significant relationship between EO and SEV pursued.

H₂: there is a significant relationship between EO and TA pursued.

H₃: there is a significant relationship between TA and SEV.

H₄: there is a positive relationship between EO and SEV mediated by TA.

RESEARCH METHODOLOGY

This paper employs a descriptive correlational research design. A survey paper is utilised to gather feedback on the correlation between variables. The phenomenon is elucidated by an examination of descriptive data acquired through questionnaires. The purpose of the correlational study is to investigate the mediating relationship that exist between the dependent and independent variables (Tan, 2014). The investigation of potential correlations between variables and enables the methodology and data to ascertain the various categories of relationships (Hair, Hollingsworth, Randolph, & Chong, 2017).

In order to investigate the relationship between Fintech sustainability, EO and TA, this article examines Fintech businesses in Malaysia as a population. Thus, the unit of analysis is aimed at the organisational level. Payment, e-wallet, prop-tech, digital bank, blockchain, cryptocurrency, remittance, AI/data, marketplace, crowdfunding, insurtech, wealthtec, Know Your Customer (KYC), and reg-tech are types of Fintech offerings and organisations that participated in this study.

Among a population of 294 Malaysian Fintech organisations, 260 Fintech organisations had participated in this study. Some 126 questionnaires (48.5 percent) were returned out of a total of 260 that were distributed. Nonetheless, 121 (46.5 percent) were deemed usable and subsequently analysed.

FINDINGS

The Measurement Model

Reliability Analysis. The analysis of the Cronbach's Alpha values for EO, TA, and Fintech sustainability exceeded 0.7. This paper concluded that every item utilised in the model's development was reliable (Hair, Ringle, & Sarstedt, 2013). In the context of composite reliability, the loadings of the indicators were distinct, and it was determined that all values above 0.7 for every item in the final model (see Table 1). The reliability of the indicators may be deemed satisfactory when the values exceed 0.7 (Hair et al., 2013).

Table 1. FSEVQ Measurement Model.

Construct	Items	Outer loading	α	CR	AVE
SEV	SEV1	0.940	0.954	0.961	0.780
	SEV10	0.923			
	SEV2	0.819			
	SEV3	0.860			
	SEV4	0.950			
	SEV5	0.954			
	SEV9	0.934			
EO	E05	0.940	0.976	0.979	0.841
	EO1	0.923			
	EO10	0.819			
	EO11	0.860			
	EO2	0.950			
	EO3	0.954			
	EO4	0.934			

	EO6	0.952			
	EO7	0.912			
TA	TA2	0.979	0.979	0.983	0.904
	TA3	0.915			
	TA4	0.971			
	TA5	0.953			
	TA6	0.964			
	TA9	0.938			

Subsequently, the AVE results presented in Table 2 for all constructs exceed 0.5, indicating a sufficient convergent validity (Hair et al., 2013). The result yielded that particular construct has explained more than half of the variance of its indicators (Hair Jr, Sarstedt, Hopkins, & Kuppelwieser, 2014; Ab Hamid, Sami, & Sidek, 2017; Basbeth & Ibrahim, 2018). Following the outer loadings and AVE report, it is further certified that the measures of the constructs has attained an adequate level of convergent validity and have met the convergent validity criteria involved in considering the measurement model of this paper.

The Heterotrait-Monotrait Ratio (HTMT) is the most recent technique for evaluating the discriminant validity of the constructs and determining the actual correlation that exists between dependable latent variables (Ab Hamid et al., 2017). Determining potential indiscriminate validity among conceptions is considered a tough undertaking (Henseler, Ringle, & Sarstedt, 2015; Hair, Risher, Sarstedt, & Ringle, 2019). Furthermore, the HTMT criterion maintained the constructs' discriminant validity and promoted the condition that the confidence interval for any of the constructs did not contain one (1) or unity (Hair et al., 2013; Kline, 2023). By applying a significance level of 0.90, Table 2 confirms that there is insufficient evidence to suggest that discriminant validity is lacking, and all constructs in this paper meets the measurement criteria that are consistent with existing literature.

Table 2. FSEVQ Heterotrait-Monotrait Ratio (HTMT).

Construct	EO	SEV	TA
EO			
SEV	0.639		
TA	0.723	0.330	

Path Coefficients. Path coefficients are predicted as the path relationship in the structural model between the constructs in the model. Each path relationship also was examined through regression coefficient (β). The result shows that Entrepreneurial Orientation (EO → SEV, t-value = 19.567, p-value = 0.000) established a significant relationship. Entrepreneurial Orientation (EO → TA, t-value = 21.232, p-value = 0.000) also established a significant relationship (see Table 3). Nevertheless, the technology adoption (TA→ SEV, t-value = 3.142, p-value = 0.002), generate a significant relationship (Hair Jr et al., 2014; Basbeth & Ibrahim, 2018). Figure 2 shows the structural model, whilst Figure 3 shows the bootstrapping model of this paper.

Table 3. Mean, STDEV, T-Values, and P-Values.

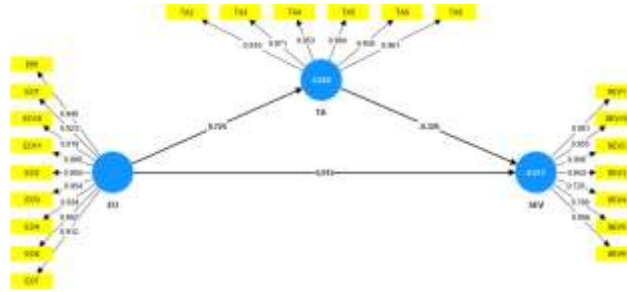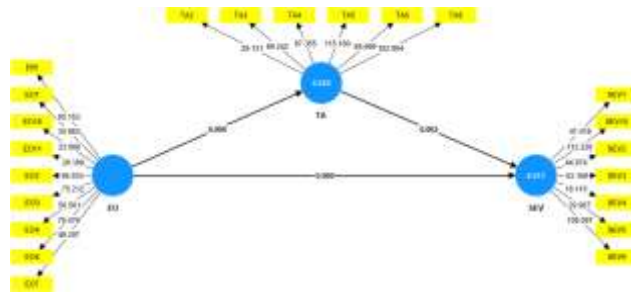| Hypotheses	Path	ß	T Statistics	P Values	Result
H₁	EO→SEV	0.915	19.569	0.000	Supported
H₂	EO→TA	0.725	21.232	0.000	Supported
H3	TA→SEV	-0.325	3.142	0.002	Supported

Fig. 2. The Structural Model

Fig. 3. The Bootstrapping Model.

Mediating Impact. The approach includes the significance of mediating impact (p-value), the t-value and the size of the mediating impact (Ramayah, Cheah, Chuah, Ting, & Memon, 2018; Henseler & Chin, 2010; Memon, Cheah, Ramayah, Ting, Chuah, & Cham, 2019). From the bootstrapping procedure, TA does have the direct relationship with SEV (TA➔SEV, t-value = 3.142, p-value = 0.002) in a negative manner. The result further extends that TA does have a significant mediation path between the relationship of EO and SEV (EO➔TA➔SEV, t-value = 3.213, p-value = 0.001). Based on the bootstrap β value of the path model, it is evident that there is a negative and significant relationship between TA on SEV and the mediation path (see table 4).

Table 2. Mean, STDEV, T-Values, and P-Values.

Hypotheses	Path	ß	T Statistics	P Values	Result
H₄	EO➔TA➔SEV	-0.235	3.213	0.001	Supported

TA does mediate the relationship between EO and SEV. This paper has expanded the current flow of knowledge by utilising SmartPLS-SEM 4.0.9.9 path modelling as an analysis tool to examine the relationship between EO and SEV with mediation role of TA among Fintech organisations in Malaysia. From the model of this paper, Fintech organizations should scrutinise the aisle of TA to be able to developed an imperative SEV business model. They also need to strive to exchange the ability in an effective manner to collaborate based on technology relationship.

CONCLUSION

This paper incorporated the variables of EO, TA and SEV into a conceptual model that has been tested empirically. The framework established the EO impact on SEV relationship, mediated by TA. The results offer insight into knowledge regarding SEV and their predictors in role in action. This paper emphasized the importance of SEV for Fintech organizations sustainability and its value creation agenda in financial industry. This value has contributed to the new construct of SEV in Malaysian business perspectives. This paper expands the existing theoretical understanding on the relationship between EO and SEV by contributing to the multi-dimensional construct perspective. Consequently, a thorough knowledge of the intricate phenomena involving Fintech companies' disparate operational styles has been made possible. Together with adding to the corpus of

knowledge about Fintech emerging economies, the mediating role of TA in the relationship between EO and SEV has also contributed to the current rising practical demands in industry and academia.

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