ENTREPRENEURIAL OPPORTUNITY RECOGNITION AND EXPLOITATION IN EMERGING ECONOMIES

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ABSTRACT

This study explores the mechanism of opportunity recognition and exploitation in entrepreneurial context within developing countries by specifically focusing on cognitive, contextual and social factors.

Methodology

Cross sectional data collection has been collected from 299 entrepreneurs affiliated to private and public incubators across Pakistan. Based on Resource Based Theory (RBT) and Social Capital Theory (SCT), the study examines the influence of cognitive, social and contextual factors on the successful exploitation of entrepreneurial opportunity.

Findings

Opportunity recognition has emerged as an important mediating factor between cognitive factors, contextual factors and opportunity exploitation. Social intelligence and social capital are found to be significant moderators to enhance the entrepreneurial outcomes in resource-constrained and volatile economies.

Originality

The study integrates RBT and SCT to understand entrepreneurial processes in emerging economies. Study fills critical gaps by examining the interplay of individual, environmental, and social factors in entrepreneurial success.

Practical implications

Findings offer actionable insights for fostering entrepreneurship through policy making, training and development to enhance cognitive and social skills.

Social implications

Strengthening social capital and intelligence can amplify entrepreneurial success and can contribute to economic development within emerging economies.

Keywords: Opportunity Recognition; Opportunity Exploitation; Emerging Economies; Entrepreneurial Dynamics; Environmental Dynamism; Business Incubators

INTRODUCTION

Entrepreneurship is globally recognised as the driver of economic growth along with innovation and job creation (Qoriawan & Apriliyanti, 2022). In the current epoch the emerging economies are facing socio-economic challenges including unemployment and resource underutilization (Ivanović-Đukić et al., 2022; Wei et al., 2023). The pith of entrepreneurship lies in the process of entrepreneurial opportunity recognition (EOR) and

exploitation (EOE). EOR includes identification of market gaps whereas EOE refers to the transformation of recognised opportunities into viable business ventures (Swartz et al., 2022); the amalgamation of the two defines the core of the entrepreneurial activity (Zhao et al., 2024).

Despite extensive research the critical question to date seeks an answer: Why do some individuals excel at recognizing and exploiting opportunities while others fail, even under similar conditions? Extant literature has elaborated upon cognitive, social, and contextual factors of opportunity recognition. Studies have emphasised on the importance of said factors in shaping entrepreneurial outcomes (Nayak & Pillai K, 2024; Taleb et al., 2023). However, Qoriawan and Apriliyanti, (2022) argues that interaction of these factors particularly in dynamic and resource-constrained environments of emerging economies has been underexplored. Moreover, limited empirical evidence links entrepreneurial cognition, self-efficacy, alertness, orientation and environmental dynamism to successful opportunity exploitation, as noted by Ivanović-Đukić et al. (2022). To address this gap, this study investigates the mechanisms underpinning opportunity recognition and exploitation in entrepreneurial contexts. This study addresses the following key research questions:

RQ1: What cognitive, contextual, and social factors influence entrepreneurial opportunity recognition (EOR) and exploitation (EOE) in emerging economies?
RQ2: How does EOR mediate the relationship between these antecedents and EOE?
RQ3: To what extent do social intelligence (SI) and social capital (SC) moderate the relationship between EOR and EOE?

To answer these questions, the study has three primary objectives:

RO1: To investigate the influence of cognitive, contextual, and social factors on EOR and EOE.
RO2: To examine the mediating role of EOR in linking antecedents to entrepreneurial outcomes.
RO3: To analyse the moderating effects of SI and SC on the EOR and EOE process.

Addressing the posed research questions and objectives will address the critical research gaps contributing to the academic discourse and devising a roadmap for the entrepreneurial success in emerging economies. The study is built upon the integration of cognitive, social and contextual factors to unearth the full potential of recognition and exploitation of entrepreneurial opportunity (Aboobaker & KA, 2023; Lingappa et al., 2022).

RBT has guided the study as it marks the resources and capabilities to be critical for achieving competitive advantage (Alvarez & Barney, 2007; Barney, 1991). RBT provides the basis for the cognitive quality of entrepreneurs to be the resources of opportunity recognition and exploitation (Baah et al., 2023; Fazal et al., 2023). Integration of RBT with cognitive and social constructs has enabled the study to develop a framework that inform about the roles of these factors to be the antecedents, mediators and moderators. Grounded in RBT the study offers a robust perspective on entrepreneurial dynamics in emerging economies.

Pakistan as an emerging economy offers the opportunity to investigate entrepreneurial dynamics. With 64% of its population under the age of 30, Pakistan bears an immense entrepreneurial potential (Wei et al., 2023). Although in emerging economies institutional voids, resource limitations and socio-cultural constraints make entrepreneurship a daunting task (Zhao et al.,2024); and native entrepreneurs have to deal with these problems. The said challenges could only be tackled by developing a understanding of individuals cognitive capabilities and external environmental factors with reference to EOR and EOE (Qoriawan & Apriliyanti, 2022). As Swartz et al. (2022), given the context emphasized the need for further exploration - offering empirical evidence - to fill these gaps. The said gap is filled by the study through development and empirical testing of the theoretical framework based upon RBT. It encapsulates the drivers of EOR and EOE. As Mishra and Singh (2024) and Nungsari et al. (2023) argued that such frameworks are required to offer a broad view of dynamics of emergent entrepreneurial activities in emerging economies.

The study is an attempt to model how EOR and EOE takes place in emerging economies. Although extant literature has highlighted the importance of cognitive factors and the social constructs in shaping entrepreneurial behaviours (Broccia et al., 2022; Q. Yang et al., 2023). However, Aboobaker and KA (2023) and Lingappa et al. (2022) asserted that these factors are studied in isolation whereas, this study informs how these factors impact one

another in dynamic and resource constrained contexts. Therefore, the study fills the void by providing empirical evidence. Hence, this study provides a pathway to fostering entrepreneurship in emerging economies as demanded by Tampouri et al. (2023) and Vankov et al. (2023).

The challenge in emerging economies is that entrepreneurs are exposed to multitude of challenges including institutional voids, high market volatility and resource constraints etc. (Baah et al., 2023; Q. Yang et al., 2023). Given the difficulties, navigating through these complexities is cardinal for entrepreneurs (Nungsari et al., 2023). As successful exploration is not possible without crucial cognitive and environmental resources including ESC, ESE, EA, EO, SI and SC as highlighted by previous studies (Fazal et al., 2023; Mishra & Singh, 2024). However, it has been indicated by Aboobaker and KA (2023) and Lingappa et al. (2022) that existing studies lack empirical research that how these factors collectively affect entrepreneurial outcomes in emerging markets.

The results provide both theoretical and practical implications. Theoretically, the study contributes to understanding of the drivers of EOR and EOE with detailed mediating and moderating mechanisms based upon RBT. In practice, study offers actionable recommendations to policymakers, business incubators, educational institutions. As they seek to develop the entrepreneurial ecosystems (Fazal et al., 2023; Q. Yang et al., 2023). The study addresses the said critical issues by contributing to the academic discourse through drafting a roadmap to enhance the entrepreneurial success within emerging economies.

LITERATURE REVIEW

Opportunity Recognition and Exploitation

Entrepreneurship, a key driver of economic growth, holds particular significance in emerging economies where institutional lag and resource shortages challenge traditional economic models (Kardani et al., 2021). Central to entrepreneurial success are opportunity recognition (EOR), the process of identifying market gaps, and opportunity exploitation (EOE), transforming these gaps into viable business ventures (Faroque et al., 2021). Cognitive, contextual, and social factors dynamically influence how entrepreneurs navigate uncertainty and leverage resources (Lim et al., 2016a).

Despite its importance, limited research exists on how EOR and EOE interact to shape entrepreneurial outcomes in emerging economies, often characterized by resource volatility, market dynamism, and institutional voids (Amini Sedeh et al., 2022). Drawing from Resource-Based Theory (RBT) and Social Capital Theory (SCT), this study examines the antecedents, mediators, and moderators of EOR and EOE. Cognitive capabilities, particularly entrepreneurial alertness, self-efficacy and cognition are critical in EOR, especially when paired with supportive social and institutional frameworks (Faroque et al., 2021; Anwar et al., 2022).

Entrepreneurial networks and social capital (SC) further aid entrepreneurs in overcoming institutional barriers, mobilizing scarce resources, and accessing market insights (Lim et al., 2016). A multilevel perspective is essential, as national and organizational environmental factors converge to shape entrepreneurial behaviour in volatile markets (Crowley & Barlow, 2022; Pathak et al., 2014).

Resource-Based Theory (RBT)

RBT emphasizes that resources and capabilities are key drivers of competitive advantage. The role of cognitive resources including ESC and ESE in the entrepreneurial opportunity recognition is highlighted in RBT (Alvarez & Barney, 2007). Extant literature supports those cognitive abilities such as EA is important for EOR and EOE (Li et al., 2022). IED affects how entrepreneurs carry out resource deployment to recognize and exploit opportunities, thereby it is highly pertinent in entrepreneurial context. For instance, the dynamic market conditions demand dynamic resource allocation and strategic planning by entrepreneurs to be competitive (Amini Sedeh et al., 2022; Rodríguez-Peña, 2023). In this frame of reference, RBT guides how to examine the said elements and subsequently offers a robust framework. It informs how internal resources of entrepreneur

predicts entrepreneurial outcomes (Alvarez & Busenitz, 2007).

Social Capital Theory (SCT)

The value derived from social networks is the focus of SCT, with relationships being considered as a source of access of resources, information, and support (Lee, 2017). Strong SC enables such entrepreneurs to utilize their network connections to overcome institutional voids, reduce risks and gain invaluable market insight (Crowley & Barlow, 2022). These insights highlight the centrality of SI as a key weapon with which to maintain SC, which as a result improves entrepreneur's ability to build trust and collaboration. Consequently this results to recognise and exploit opportunity (Baluku et al., 2018).

This study puts together RBT and SCT theories to construct a comprehensive framework of how cognitive, contextual and social factors can interact. The differences between RBT and SCT are with respect to the role of individual and environmental resources versus the role of external networks and relationships. Combining these perspectives together constitutes the basis for the study's hypotheses about the broader dimensions of entrepreneurial success.

Cognitive Factors and Opportunity Recognition

In general, cognitive factors are important to EOR as they are internal resources that can influence EOR. Based on RBT, cognitive capabilities, as capacity to perceive, evaluate and act on opportunities are seen as essential resources for entrepreneurs (Barney, 1991). ESC, ESE and EA as three critical cognitive constructs together add to the entrepreneur's capability of successful opportunity exploitation.

ESC is defined as an individual's capacity to recognize their strengths and limitations for alignment with entrepreneurial tasks (Liao et al., 2022a; Yangailo & Qutieshat, 2022). Entrepreneurs are able to be aware of opportunities defined by their unique skill sets, specifically in volatile and with limited resources available (Mary George et al., 2016). Entrepreneurs having good cognitive abilities enable them to execute entrepreneurial tasks effectively and heightens the likelihood of EOR (Goktan & Gupta, 2021; Liao et al., 2022a). The findings across extant research demonstrated that high ESE leads to proactive behaviour and resilience for entrepreneurs. It enables them to overcome challenges and seize opportunities under uncertain conditions (Fazal et al., 2023). These traits are complemented by EA, which refers to the capacity to detect and interpret environmental signals, and thus timely identify market opportunities (Li et al., 2022; Tang et al., 2012). According to Li et al. (2022), entrepreneurs with high EA are able to recognize the changing situations such as consumer preferences, technological advancements and market trends as well as taking advantage from the occurrence of the new opportunities.

These cognitive resources together constitute a basis for EOR, in line with the principles of RBT. Hence it is implies that individual capabilities can play a key role in entrepreneurial success (Alvarez & Busenitz, 2007). Therefore, the study proposes the following hypotheses for empirical testing:

H1: ESC positively influences EOR.
H2: EA positively influences EOR.
H3: ESC positively influences EOR.

Contextual Factors and Opportunity Recognition

Contextual factors such as IED play a critical role in shaping EOR. IED is referred to as a rapid and unpredictable change in the market conditions that could be triggered by the technological advancements that evolve consumer preferences and totally changes the competitive landscapes (Rodríguez-Peña, 2023). Such changes bring a disequilibria in the market that could potentially be exploited by the entrepreneurs through EOR at first and then acting on those emerging opportunities (Liang et al., 2024; Rodríguez-Peña, 2023).

Based upon RBT, IED is viewed as an external factor with an explicit capacity to interact with

entrepreneur's internal resources for instance cognitive characteristics and capabilities to enhance the EOR. Hence, in the dynamic environments entrepreneurs having strong ESC, EA and ESE have a competitive edge to perceive and capitalize on the opportunities arising from market fluctuations (Alvarez & Barney, 2007; Indrawati et al., 2022; Li et al., 2022). Verily, IED introduces certain challenges and entrepreneurs are required to quickly adapt to these volatile conditions to manage the risks attached with the oncoming uncertainty (Baah et al., 2023).

Within emerging economies, IED is highly pertinent due to institutional voids, resource scarcity and rapidly changing markets (Wang et al., 2021). Entrepreneurs embedded in those economies have to navigate through all these difficulties while leveraging their capabilities to identify the opportunities well aligned with the emerging market needs (Amini Sedeh et al., 2022; Yildirim et al., 2022). For instance, the technological advancement in the market often creates certain niches that require innovative solutions that alert entrepreneurs can recognize and exploit (Tang et al., 2012).

H4: IED positively influences EOR.

Social Factors and Opportunity Recognition

SI and SC as the prominent social factors for entrepreneurship are the critical factors of EOR. Literature based on SCT suggests that these constructs facilitate the derivation of resource, information and support value from networks and relationships for entrepreneurs. In the resource constrained environments as explicated by Daskalopoulou et al. (2023) and Wu et al. (2024), these factors are proven to be useful for entrepreneurs. Therefore, when navigating through institutional voids, entrepreneurs with strong social networks can better mitigate risk, locate opportunities relevant to the market needs (Ceptureanu et al., 2020). Entrepreneur's SC hold utmost importance in the resource constrained environments (Daskalopoulou et al., 2023; Wu et al., 2024). Therefore, entrepreneurs with strong social networks are better able to navigate through institutional voids, while mitigating risks, and identifying opportunities that align with market needs (Ceptureanu et al., 2020).

SI is described as entrepreneur's capacity to manoeuvre in social interactions and create trust and collaboration on social networks (Broccia et al., 2022). Emphasizing the SI and related social skills, entrepreneurs were found to be quicker in building relationships, which provided them ease of access to critical market insights as well as their necessary resources and partnerships (Sadabadi & Rahimi Rad, 2022). Because emerging markets lack formal support systems therefore this form of intelligence is highly valuable. Thus, SI strengthens the entrepreneur's capacity to negotiate and to solve conflicts. It produces helpful situations for identifying and after that capitalizing upon these opportunities (Mishra & Singh, 2024).

SC is referred to as the resources that are embedded with the entrepreneur's network. This might also include the access to critical resources such as funding, mentorship along with knowledge and support that allows EOR and respective EOE (Redondo & Camarero, 2019; Xie et al., 2021). In this frame of reference, entrepreneurs in emerging economies facing resource scarcity and institutional challenges use SC as a mechanism to catapult them to overcome the barriers in the way of success (Crowley & Barlow, 2022). Take the instance of Zhang (2024) who explicated that entrepreneurs with sufficient SC leverage their network to gain information about emerging market trends and as a result build collaborative venture. Hence aligned with the principles of SCT such entrepreneurs enhance their ability to identify and act upon opportunities. This highlights the transformative potential of networks and relationships in entrepreneurial success.

H5: SI positively influences EOR.
H6: SC positively influences EOR.

Mediating Role of Opportunity Recognition

EOR plays a pivotal role in connecting entrepreneurial antecedents, such as cognitive and contextual factors, to opportunity exploitation (Filser et al., 2023; Kuckertz et al., 2017). Drawing on RBT, EOR serves as a critical mechanism for leveraging internal resources to create value (Alvarez & Barney, 2007; Barney, 1991).

Entrepreneurs bearing three characteristics are more able to identify and exploit opportunities. This includes high levels of ESC, ESE and EA (Pidduck & Clark, 2024; Ramsey et al., 2023).

In emerging economies where entrepreneurs frequently operate in environments characterized by high levels of uncertainty and limited access to formal support systems, the mediating role played by the EOR is particularly important. Entrepreneurs who overcome resource constraints and recognise opportunities based upon their cognitive qualities as mentioned previously, are better able to navigate volatile markets (Anwar et al., 2022; Yin et al., 2021). Hence based upon the premise the study put forward following hypotheses:

H7: EOR mediates the relationship between ESC and EOE.

H8: EOR mediates the relationship between EA and EOE.

H9: EOR mediates the relationship between ESE and EOE.

H10: EOR mediates the relationship between IED and EOE.

H11: EOR mediates the relationship between SI and EOE.

Moderating Role of Social Intelligence and Social Capital

The extant research suggested that SI and SC can play an effective role in process of EOR and its respective outcomes (Ruiz-Palomino & Martínez-Cañas, 2021). Thus, these factors enhance the entrepreneur's capability of coping with dynamic environment and make good use of networks thus becoming more successful in the EOR and EOE (Xie et al., 2021).

SI, based on SCT allows an entrepreneur to use their social networks more effectively and efficiently build trust, and build collaboration (Crowley & Barlow, 2022; Wu et al., 2024). Socially intelligent entrepreneurs utilize SI to recognize opportunities for novelty, leveraging cognitive and contextual resources including self-consciousness and IED (Tekala et al., 2024). For instance, entrepreneur high on SI leverages interpersonal skills to access critical information about market trends or partnerships to expand EOR (Zhang, 2024).
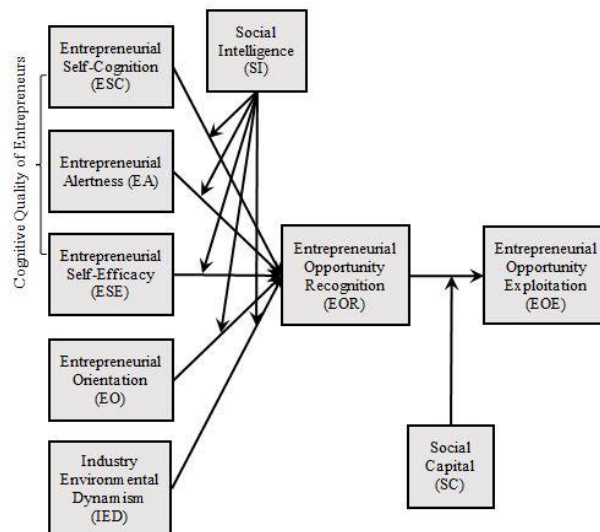

Figure 1
THEORETICAL FRAMEWORK

By integrating RBT and SCT, the study bridges key gaps and proposes seventeen hypotheses to be tested with empirical data. Therefore, the theoretical framework presented in Figure 1 put forward.

The relationship between EOR and EOE is moderated by SC, or resources embodied in social networks

(Ruiz-Palomino & Martínez-Cañas, 2021; Xie et al., 2021). SC helps entrepreneurs gain access to funding, mentorship and market insight, giving them more ability to act on such recognized opportunities (Crowley & Barlow, 2022; Solanki et al., 2023). Within emerging economies, Baah et al. (2023) elaborated that institutional voids and resource scarcity create a critical reliance on social networks as a mechanism of support. Therefore, this moderating role is particularly important based upon which the following is hypothesised:

H12: SI moderates the relationship between ESC and EOR.
H13: SI moderates the relationship between EA and EOR.
H14: SI moderates the relationship between ESE and EOR.
H15: SI moderates the relationship between IED and EOR.
H16: SI moderates the relationship between EO and EOR.
H17: SC moderates the relationship between EOR and EOE.

METHODOLOGY

This study employs a positivist philosophy and a deductive approach to examine the hypotheses derived from RBT and SCT. Positivism supports the objective measurement and validation of relationships among cognitive, contextual, and social factors influencing EOR and EOE (Alvarez & Busenitz, 2007; Kuckertz et al., 2017). A quantitative research design was selected to facilitate hypothesis testing and ensure the generalizability of findings within entrepreneurial ecosystems in emerging economies (Anwar et al., 2022; Nayak & Pillai K, 2024).

The research design is cross-sectional and causal, emphasizing the explanatory purpose of identifying pathways between independent, mediating, moderating, and dependent variables (Barney, 1991; Broccia et al., 2022). Data collection followed a mono-method strategy, relying on structured survey questionnaires (Grieve & Mahar, 2013; Tang et al., 2012). A time-lagged approach was adopted to minimize common method bias by temporally separating variable measurements (Filser et al., 2023; Hair et al., 2020).This study has targeted entrepreneur, particularly founders and co-founders of startups that are incubated across nine majors cities of Pakistan. Cities include Rawalpindi, Islamabad, Lahore, Karachi, Multan, Rahim Yar Khan, Faisalabad, Sialkot and Peshawar. Incubators across these cities were chosen to ensure inclusion of diverse entrepreneurial ecosystem (Wei et al., 2023; Zhao et al., 2024).

Sample was chosen based upon convenience as it was more practical method to collect data (Bougie & Sekaran, 2019). It was made sure that participants have spent at least six month in incubation ensuring adequate entrepreneurial experience (Anjum et al., 2018; Mahmood et al., 2016). 750 questionnaires were distributed out of which 299 valid responses were recorded marking 39.86 % response rate offering a robust sample size for examination. Detailed demographic and response rate information is presented in the results section (see Table 2).

Data was collected in three phases, where first phase was dedicated to the collection of demographic characteristics and independent variables, such as ESE, ESC, and EA, along with the first moderator, SI (Bougie & Sekaran, 2019; Saunders et al., 2019). Data for the EOR and SC were collected in second phase. The final phase was conducted to capture data of dependant variable (i.e. EOE). Collection of data in multiple phases allowed for temporal separation of variables and reduced the biases attached with simultaneous data collection (Bougie & Sekaran, 2019; Saunders et al., 2019). Ethical protocols, including participants anonymity and confidentiality were made sure throughout the research process (Bougie & Sekaran, 2019). Validated scales were adapted from existing literature to measure key constructs as shown in Table 1

Table 1 INSTRUMENT SUMMARY			
Constructs	**No. of Items**	**Scale**	**Adapted form**
ESC	6	05-point Likert	Xu (2020)
EA	4	05-point Likert	Tang et al. (2012)
ESC	6	05-point Likert	Xu (2020)

EO	5	05-point Likert	Bolton & Lane (2012)
IED	3	05-point Likert	Pérez-Luño et al. (2011)
SC	3	05-point Likert	Mccline et al. (2000)
SI	3	05-point Likert	Grieve & Mahar (2013)
EOR	5	05-point Likert	Kuckertz et al. (2017)
EOE	4	05-point Likert	Kuckertz et al. (2017)

Note: Developed for the Study

Cronbach's Alpha, composite reliability (CR), Fornell-Larcker criterion and HTMT ratios, were employed to ensure robust measurement properties of instruments (Filser et al., 2023; Jr. et al., 2017). Data analysis was conducted using Partial Least Squares Structural Equation Modelling (PLS-SEM) to test the proposed hypotheses. PLS-SEM was employed given its ability to handle complex models with mediating and moderating mechanisms (Hair et al., 2020; Sarstedt et al., 2022).Using Smart PLS bootstrapping with 5000 resamples was employed to estimate the significance of path coefficients. Given the exploratory nature of study this technique allowed reliable and valid results (Hair et al., 2020; Mishra & Singh, 2024).

RESULTS

Demographic Profile

A comprehensive demographic profile of the 299 respondents is presented in Table 2, participants are startup founders and co-founders operating in public and private business incubators in Pakistan. The data highlights significant gender disparity, with 85.61% male participants and only 14.38% female participants, reflecting a gender imbalance in the entrepreneurial landscape.

In terms of age distribution, the majority of respondents (83.60%) are under 30, with nearly half (49.16%) aged below 25. This underscores the dominance of younger individuals in the startup ecosystem, aligning with the entrepreneurial potential of Pakistan's youth population. Educational qualifications reveal that 70.23% of respondents hold graduate degrees, while 20.40% have completed a master's degree. Advanced qualifications such as MPhil/MS (8.69%) and PhD (0.66%) are less common.

Sector-wise, the majority of startups (58.86%) belong to the private sector, while 41.13% operate in the public sector. This distribution reflects the diverse entrepreneurial ecosystem in the country and the varying challenges faced by public and private sector entrepreneurs.

Table 2 DEMOGRAPHIC PROFILE		
Demographics	**Frequency**	**Percentage**
Gender		
Male	256	85.61
Female	43	14.38
Age		
Less than 25	147	49.16
26 – 30	103	34.44
31 - 35	29	9.69
36 - 40	13	4.34
41 – 45	4	1.33

46 - 50	2	0.66
Above 50	1	0.33
Education Level		
Graduation	210	70.23
Masters	61	20.4
MPhil / MS	26	8.69
PhD	2	0.66
Sector		
Public	123	41.13
Private	176	58.86
Total	299	100

Measurement Model Evaluation

Before testing the structural relationship of the model the measurement model was assessed as mentioned by Sarstedt et al. (2022) for reliability and validity. Measurement model assessment was focused on internal consistency, convergent validity, and discriminant validity of the measured constructs.

Table 3 MEASUREMENT MODEL ANALYSIS						
Construct	**Items**	**Loading**	**Cronbach's alpha**	**CR (rho_a)**	**CR (rho_c)**	**AVE**
EA	EA1	0.66	0.867	0.914	0.888	0.501
	EA2	0.745				
	EA3	0.794				
	EA4	0.753				
EO	EO1	0.792	0.847	0.848	0.888	0.572
	EO2	0.8				
	EO3	0.869				
	EO6	0.65				
EOE	EOE1	0.801	0.823	0.866	0.882	0.652
	EOE2	0.893				
	EOE3	0.724				
	EOE4	0.803				
EOR	EOR1	0.737	0.735	0.759	0.836	0.565
	EOR2	0.825				
	EOR3	0.834				
	EOR4	0.689				
	EOR5	0.761				
ESC	ESC1	0.794	0.955	0.974	0.959	0.582
	ESC2	0.754				
	ESC3	0.858				
	ESC4	0.663				
	ESC5	0.753				

	ESC6	0.679				
ESE	ESE1	0.722	0.761	0.899	0.841	0.512
	ESE2	0.922				
	ESE3	0.858				
	ESE4	0.923				
	ESE5	0.725				
	ESE6	0.789				
IED	IED1	0.8	0.555	0.542	0.772	0.532
	IED2	0.754				
	IED3	0.623				
SC	SC1	0.552	0.636	0.683	0.765	0.533
	SC2	0.638				
	SC3	0.942				
SI	SI1	0.738	0.913	0.928	0.921	0.504
	SI2	0.886				
	SI3	0.735				

Cronbach's Alpha and CR was evaluated (see Table 3); where all constructs exhibited the recommended threshold of 0.7 for Cronbach's Alpha and CR. (Sarstedt et al., 2022). Average variance extracted (AVE) is reported in Table 3 with all values above 0.5 benchmark making sure that the substantial portion of variance is captured by the constructs (Hair et al., 2020; Henseler et al., 2015).

Table 4 **FORNELL AND LARCKER CRITERION**									
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1	**EA**	0.708								
2	**EO**	0.039	0.757							
3	**EOE**	0.035	0.009	0.807						
4	**EOR**	0.146	0.085	0.381	0.752					
5	**ESC**	0.038	0.161	0.085	0.134	0.763				
6	**ESE**	0.056	-0.035	0.221	0.537	0.013	0.716			
7	**IED**	0.13	-0.312	-0.027	0.16	0.073	0.09	0.73		
8	**SC**	0.012	0.05	0.301	0.324	0.048	0.349	0.061	0.73	
9	**SI**	-0.067	-0.041	0.218	0.33	0.109	0.3	0.054	0.15	0.7

Additionally, Fornell and Larcker ratio, a reliable measure for the discriminant validity was examined as shown in Table 4. All values were below the commonly accepted thresholds of 0.85 or 0.90, depending on the theoretical model's complexity (Henseler et al., 2015; Sarstedt et al., 2022). This validation shows that the constructs in the model are empirically distinct form one another marking the robustness of measurement model (Fornell & Larcker, 1981). Additionally HTMT ratios are presented in Table 5 where the values are below the conservative threshold of 0.85 supporting discriminant validity (Rasoolimanesh, 2022; Sarstedt et al., 2022). Only after the rigorous validation of the measurement model the structural model was analyzed.

Table 5 **HTMT RATIOS**									
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**

1	**EA**								
2	**EO**	0.135							
3	**EOE**	0.107	0.058						
4	**EOR**	0.144	0.142	0.451					
5	**ESC**	0.101	0.189	0.101	0.173				
6	**ESE**	0.099	0.089	0.296	0.684	0.081			
7	**IED**	0.249	0.445	0.121	0.262	0.138	0.193		
8	**SC**	0.07	0.102	0.343	0.421	0.096	0.557	0.11	
9	**SI**	0.144	0.082	0.266	0.351	0.112	0.345	0.1	0.27

Structural Model Analysis

After the validation of measurement models, the structural model was tested to evaluate the hypotheses relationship proposed by the study. Path coefficients (β), t & p-values were calculated using bootstrapping with 5000 resamples. Analysis provided the insights into direct effects of ESC, EA, ESE, IED, and EO on EOR, as well as the influence of EOR on EOE.

Table 6 summarised the findings and shows that ESC is significantly influenced by EO (β = 0.088, $p <$ 0.05). This shows that it is important for entrepreneurs to be self-aware and understand their strengths and limitations because it enables them to recognise opportunities specifically in dynamic environment (Bui et al., 2023; Ciambotti et al., 2023). EA has been emerged as a predictor of EOR (β = 0.244, $p < 0.01$). This marks that it is the ability of the entrepreneur to detect and interpret the environment that enable him to recognise opportunity and to perceive market gaps (Liao et al., 2022a). Similarly, ESE is observed to have a very strong impact on the EOR. ESC stands out among the other cognitive factors to recognise opportunity (β = 0.393, $p < 0.01$). This result aligns it with the established importance of ESE and its impact on EOR (Tang et al., 2012).

<div align="center">Table 6
SUMMARY OF DIRECT HYPOTHESES</div>

	Relationship	β	SE	t-value	p-value	5.00%	95.00%	Status
H1	ESC -> EOR	0.088	0.049	1.796	0.036	0.007	0.168	Accepted
H2	EA -> EOR	0.244	0.048	5.13	0	0.166	0.322	Accepted
H3	ESE -> EOR	0.393	0.043	9.164	0	0.323	0.464	Accepted
H4	EO -> EOR	0.114	0.069	1.654	0.049	0.001	0.227	Accepted
H5	IED -> EOR	0.088	0.047	1.859	0.032	0.01	0.165	Accepted
H6	EOR -> EOE	0.278	0.058	4.823	0	0.183	0.373	Accepted

Note. Significance < 0.05 ($p < 0.05$), n = 299 M, β = path coefficients, t- value>1.96

Contextual factors also played a significant role in shaping EOR. IED exhibited a positive and significant influence (β = 0.088, $p < 0.05$), as shown in Table 6, emphasizing the importance of rapidly changing market conditions as a catalyst for EA and adaptability (Rodríguez-Peña, 2023). Similarly, EO showed a positive relationship with EOR (β = 0.114, $p < 0.05$), reaffirming its relevance in fostering strategic decision-making and proactiveness in entrepreneurial endeavours (Baah et al., 2023).

EOR was found to significantly predict EOE (β = 0.278, $p < 0.01$), as illustrated in Figure 2. This finding validates its mediating role in connecting cognitive and contextual antecedents to entrepreneurial outcomes, as it transforms identified opportunities into viable business ventures (Tang et al., 2012).

All of the six direct hypotheses i.e. H1 to H6 were supported. This provides robust empirical evidence for the proposed framework. The direct hypotheses validation shows that cognitive and contextual factors are crucial in driving EOR and subsequently EOE.
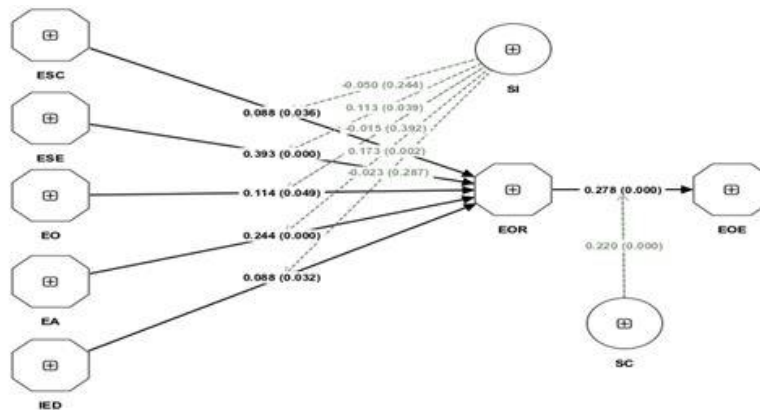
Figure 2
STRUCTURAL MODEL

Mediation Analysis

In order to analyse the role of EOR in connecting the determinants variables to EOE the mediation analysis was done. The result for the mediation analysis is presented in Table 7. Table 7 shows that the EOR plays a significant role as a mediator for the cognitive and contextual factors to exploit entrepreneurial opportunities.

	Table 7 SUMMARY OF MEDIATION HYPOTHESES							
	Relationship	**Beta**	**SE**	**t-value**	**p-value**	**5.00%**	**95.00%**	**Status**
H7	ESC -> EOR -> EOE	0.065	0.022	2.951	0.002	0.029	0.102	Accepted
H8	EA -> EOR -> EOE	0.068	0.021	3.304	0	0.034	0.101	Accepted
H9	ESE -> EOR -> EOE	0.109	0.024	4.534	0	0.07	0.149	Accepted
H10	EO -> EOR -> EOE	0.032	0.02	1.775	0.048	0.001	0.065	Accepted
H11	IED -> EOR -> EOE	0.024	0.014	1.778	0.038	0.002	0.047	Accepted

Note. bootstrapping 10,000 subsamples. Significance (p < 0.05) n = 299 t > 1.96

Three factors including ESC ($\beta = 0.065$, p < 0.01), EA ($\beta = 0.068$, p < 0.01) and ESE ($\beta = 0.109$, p < 0.01) demonstrated significant indirect effects mediated through EOR. This demonstrates the pivotal role of cognitive capabilities to transform individual strengths into entrepreneurial outcomes (Pramod & Ramachandran, 2023; Yu et al., 2023). IED encapsulating the contextual factors and EO demonstrated $\beta = 0.024$; p < 0.05 and $\beta = 0.032$; p < 0.05 respectively. These findings reveal the significance of the mediated paths. These findings are aligned and consistent with the previous studies that emphasised on the dynamic role external conditions and internal capabilities to be responsible for the successful entrepreneurial process (Rodríguez-Peña, 2023).

The presented result validates that the EOR is a critical and crucial mechanism through which the cognitive and contextual factors could drive EOE. By demonstrating the mediating role of EOR, the study deepens the understanding of how entrepreneurial behaviour evolves within resource-constrained environments.

Similarly, when it comes to IED the mediation effects are also observed ($\beta = 0.024$, p < 0.05). Additionally, EO ($\beta = 0.032$, p < 0.05) was also mediated through the EOR. Therefore, these findings demonstrate that dynamic and volatile environment foster certain behaviours leading to entrepreneurial success through mediation of EOR (Liang et al., 2024).

Moderation Analysis

The moderation analysis was done to test the proposed hypotheses where SI and SC moderate the relationships between cognitive, contextual factors and opportunity outcomes. The results are presented in Table 8;

indicating significant interaction effects in majority of the hypothesized relationships.

Table 8
SUMMARY OF MODERATION HYPOTHESIS

	Relationship	β	SE	t-value	p-value	5.00%	95.00%	Status
H12	SI x ESC -> EOR	-0.05	0.073	0.694	0.244	-0.17	0.069	Rejected
H13	SI x EA -> EOR	0.173	0.06	2.879	0.002	0.074	0.271	Accepted
H14	SI x ESE -> EOR	0.113	0.064	1.764	0.039	0.008	0.219	Accepted
H15	SI x EO -> EOR	-0.015	0.053	0.275	0.392	-0.102	0.073	Rejected
H16	SI x IED -> EOR	-0.023	0.041	0.563	0.287	-0.09	0.044	Rejected
H17	SC x EOR -> EOE	0.22	0.061	3.632	0	0.121	0.32	Accepted

Note. Significance < 0.05 ($p < 0.05$), n = 299 M, β = path coefficients, t- value>1.96

Table 8 demonstrates that SI moderated the relationships between entrepreneurial alertness and opportunity recognition (β = 0.173, $p < 0.01$). Also, same is the case between ESE and ROE (β = 0.113, $p < 0.05$). The finding highlights the role that SI plays to enhance the entrepreneurs' ability in identifying opportunities. SI leverages interpersonal and social abilities of the entrepreneur effectively (Tang et al., 2012; Viswanath et al., 2024)

Also, SC has demonstrated the significant moderating effect on the relationship present between EOR and EOE (β = 0.220, $p < 0.01$). This translates that if entrepreneur could amplify the role of network resources and relational ties, it will ultimately transform into EOR and then EOE (Rodríguez-Peña, 2023). The said interactions are visually presented in Figures 3, 4, and 5. The figures depict the graphical representation of the moderating dynamics. Overall, the four hypotheses out of the six initially proposed were supported confirming the role of social constructs in the success of entrepreneurs.
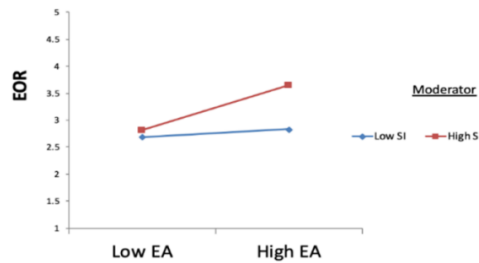
Figure 3
MODERATING EFFECT OF SI
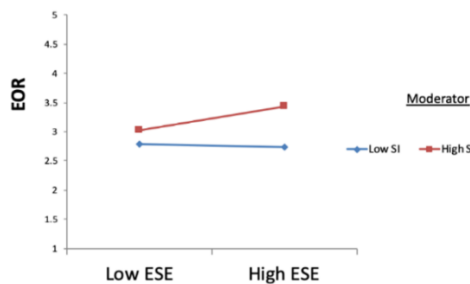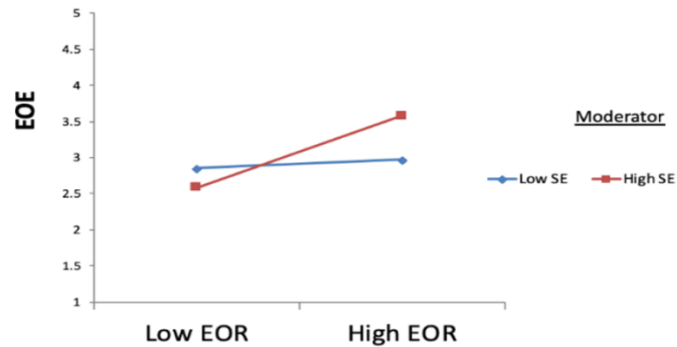

Figure 4
MODERATING EFFECT OF SI

Figure 5
MODERATING EFFECT OF SC

The findings provide a high support for the proposed framework as fourteen out of seventeen hypotheses are accepted. It has been evident that cognitive factors including ESC, EA, and ESE to be the significant predictors of EOR. Similarly, the contextual factors, IED and EO also played crucial roles in effective entrepreneurial outcomes. In this frame of reference, the EOR has emerged as a vital mediator that links the antecedents to that of EOE. The study demonstrates that the role of individuals, environment and social factors are well interconnected and are responsible for the entrepreneurial success if managed effectively. Hence, the study offers valuable insights for emerging economies imitating such dynamic and volatile environment.

DISCUSSION

This study emphasises the critical role of cognitive, contextual, and social factors in EOR and EOE. It has been evident that ESC, EA, and ESE are significant predictors of EOR. This study validates their role as critical cognitive capabilities. The derived results are aligned with the findings of the previous authors that demonstrated that individual cognitive traits shape entrepreneurial behaviour (Acharya & Berry, 2023; Yu et al., 2023). The study has shown that EA is a unique and novel contributor to EOR. The study provides the empirical evidence that EA plays a central role in entrepreneurial processes (Li et al., 2022; Ramos & Rodrigues, 2023).

The contextual factors including EO and IED greatly influence EOR. These finding are consistent with the recent research that are inclined towards the notion that dynamic environments drives entrepreneurial adaptability and proactive behaviour in uncertain markets (Baah et al., 2023). The study further adds and expands to the findings of the extant literature and goes further in showing that combined influence of cognitive and contextual factors on EOR is significant particularly in resource-constrained settings.

The results supported the mediating role of EOR in turning the antecedents into the successful entrepreneurial outcomes. The study points out that EOR has a major impact on EOE. This finding supports and extends the emerging stream of research investigating the role of EOR in generating entrepreneurial performance in emerging economies (Acharya & Berry, 2023; Liao et al., 2022). In addition, it has been evident that social factors also enhance these processes. SI moderates the interaction between EA, ESE & ESC with regards to EOR; this comes in line with Urban's (2020) observation that interpersonal competencies are critical to entrepreneurship. In the same vein, SC enhanced the relationship between recognising opportunity and respective exploitation as prior literature identified the role of social networks in entrepreneurial systems (Li et al., 2022; Nieto & González-Álvarez, 2016). These conclusions affirm the theoretical assumptions and enrich the identified cognitive, contextual and social factors affecting the EOR and EOE process in emerging economies.

The results of this study provide theoretical contributions by building on the existing literature on EOR and EOE. First of all, this study confirms that cognitive factors or resources, such as EA and ESE for entrepreneurs, play a central role in the process of EOR. This is consistent with previous studies such as Caliendo et al. (2023)

and McCarthy et al. (2023) that focused much on the roles of personal characteristics on declarative performance. However, the study extends the theoretical framework by including SI as the moderating variable by which the interpersonal skills boost these cognitive functioning.

The study also enriches the understanding about the contextual factors such as IED and EO, in supporting EOR. These findings are congruent with current literature viewing flexible business environments as factors influencing the tenacious versatility and effective strategic behaviours of entrepreneurs (Parra Requena et al., 2023; Urbano et al., 2019). In addition, the findings contribute to theory development in revealing how EOR mediates between the cognition and context antecedents and EOE.

The addition of SC as a moderating variable between EOR and EOE is another theoretic contribution of the study. It explains how relational resources enable the turning of identified opportunities into potential businesses. These contributions not only extend prior knowledge that exists about our theories but also intertwine cognitive, contextual and social elements into a whole new level. The study provides the insights about the dynamic processes of entrepreneurship in emerging economies based upon the empirical evidence.

The results derived from this study presents practical solutions to entrepreneurs, policymakers, and educators in emerging economies. The study has established that personal asset related to cognitive resources, including ESE and EA in the context of identifying opportunities are crucial. In addition, only through their identification the successful EOE is possible. Therefore, there is a need to carry out customized training programmes that cultivate these attributes to improve performance in entrepreneurship perspectives by great extent within emerging economies (Chen et al., 1998; Yu et al., 2023).

Based upon the evidence provided policy makers are in a position to help promote the spirit of entrepreneurship by helping to promote environments that support the entrepreneurs to learn these characteristics and get awareness about their role in entrepreneurial success. For example, such entrepreneurial culture within institutions will support innovation and competition that will help entrepreneurs in EOR among the business people (Braunerhjelm et al., 2015). Furthermore, there is a need to design such policies that promote networking, social skills and collaboration within young entrepreneurs incubated in incubation centres. This will result in adding to social capital of entrepreneur resulting in EOR and ultimately in capitalizing on opportunities in the longer run.

It is suggested that elements of SI and SC should be embedded into the curriculum as a part of entrepreneurial education. By focusing on the relational and interpersonal skills, educators can ensure that entrepreneurs are ready to operate in social and business contexts. This change in existing system is supported by this study and the recent findings by Istiqomah (2022) and Kokkonen and Koponen (2020).

CONCLUSION

In developing the integrated framework, this study presents novel insights for better understanding drivers of EOR and EOE, from the coherence between cognitive, contextual, and social factors. The results confirm the important role of ESC, EA and ESC as cognitive capabilities to help boost EOR well aligned with previous research (Boudreaux et al., 2019; Camelo-Ordaz et al., 2020). Additionally, the importance of IED for fostering entrepreneurial activity as previously discussed by Aftab et al. (2024) and Baah et al. (2023) is also highlighted by contextual factors of the study by including IED and EO. While individual traits being reconciled with external conditions.

Another strength of this research is the critical attempt to use social constructs as the moderators. The interaction of SI with cognitive factors of EOR has enhanced their respective impact, whereas, SC intensified the positive effect of EOR on EOE. These results shed light on relational and interpersonal dynamics and a suggestion that, especially within emergent economies – interpersonal relations are key in enabling the success of entrepreneurial endeavours as endorsed by (Lyu et al., 2024; Yu et al., 2023).

This research contributes to theoretical discourse by linking cognitive and SC theories in the context of

unique emerging economy dynamics. It also offers actionable recommendations to create an entrepreneurial ecosystem. Previous empirical works focusing on the developmental requirements of EO and SC as by Gul et al. (2024) and J. Yang and Yu (2022) aligned with the study suggested that entrepreneurs should cultivate cognitive and relational skills and that policymakers and educators must work to create supportive environments. This will result in capacity building initiatives to strengthen EO and SC. This work presents a comprehensive framework to guide future study on how to improve entrepreneurial outcomes and foster sustainable economic growth by addressing the cognitive, contextual and social dimensions of entrepreneurship.

Limitations and Future Research Directions

The study has sampled the entrepreneurs in an emerging economy, limiting the generalizability of results. Further, to extend the generalisability of findings, future research could be made to determine these relationships in developed economies, or in different cultural contexts. Study uses a cross-sectional research design, restricting the possibility to map developmental changes in entrepreneurship over time. It is advised that longitudinal assessments should explore change patterns of cognitive, contextual, and social factors in relation to opportunity recognition and exploitation. Moreover, the study tested proposed framework by using quantitative research techniques only, though effective, might not be able to capture all the contextualised experiences of the entrepreneurs. Future research may use mixed methods in efforts to uncover more insights bound to opportunity recognition and exploitation.

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