

**Islamic Work Ethics and Entrepreneurial Orientation:
Empirical Evidence from Private Small and Medium Enterprises in Yemen**

Nezar Mohammed Al-Samhi

Email: nez.abduqader@uoh.edu.sa

Department of Marketing, College of Business Administration, University of Ha'il, Saudi Arabia

Yaser Hasan Al-Mamary *

* Corresponding Author

Email: yaser_almamary@yahoo.com

Department of Management and Information Systems, College of Business Administration,
University of Ha'il, Saudi Arabia

Ismail Hussein Ali Hussein

Email: Ismail.Hussein@gmail.com

Lebanese International University, Sana'a, Yemen

Received: 22/10/2025

Revised: 11/12/2025

Accepted: 15/12/2025

Abstract

This study investigated the relationship between Islamic work ethics and entrepreneurial orientation in small and medium-sized companies in Yemen. Despite Islam's encouragement for financial independence and self-employment, entrepreneurial levels remain low in Islamic countries. This contradiction highlights the need to understand how Islamic work ethics influence entrepreneurial behavior. The main objective of this study was to measure the relationship between Islamic work ethics and entrepreneurial orientation in small and medium entrepreneurial organizations in Yemen. A quantitative research approach was adopted, and cross-sectional data were collected from 137 owners and managers of small and medium-sized enterprises (SMEs) in the cities of Sana'a, Al-Hudaidah, and Taiz. Canonical correlation analysis was used to test the relationship between the sub dimensions of Islamic work ethics effort at work, honesty at work, teamwork practice, and accountability practice and the sub dimensions of entrepreneurial orientation, innovativeness, proactiveness, and risk-taking. The results showed very strong and significant correlations between the two constructs. Each sub dimension of Islamic work ethics demonstrated a strong relationship with the entrepreneurial orientation dimensions. These findings align with previous literature on the role of ethics in shaping motivation, performance, and innovation. This study provides important implications for small business owners and policymakers by recommending ways to strengthen and utilize Islamic work ethics to enhance entrepreneurship culture. The originality of this study lies in its use of a multidimensional approach to both Islamic work ethics and entrepreneurial orientation within the context of Yemeni SMEs, filling a gap in existing research and offering valuable practical and theoretical insights.

Keywords: Islamic Work Ethics, Entrepreneurial Orientations, Small and Medium-Sized Enterprises, Canonical Correlation, Yemen

1. Introduction

Organizations in the business field have always sought ways to enhance performance and ensure survival (Conte et al., 2021). In stable periods, they aim to outperform competitors, while during difficult times they focus on recovery and continuity (Laronde, 2021). Choosing the right strategic approach is therefore essential for long-term success (Gupta et al., 2023). Entrepreneurial strategy has emerged as one of the most effective approaches for achieving both performance and continuity (Shepherd & Patzelt, 2021). It enables organizations to strengthen competitive advantage (Crick & Crick, 2021), adopt new technologies (Diandra, 2021), and manage crises more effectively (Krishnan et al., 2022). As a result, entrepreneurial strategies are increasingly viewed as fundamental for organizational survival.

However, developing entrepreneurial strategies requires adequate financial resources, strong leadership, a supportive environment, and the ability to learn (Modarresi Saryazdi et al., 2022; Hitt et al., 2021; Gans et al., 2019). A solid base of intellectual capital further enhances strategic development (Anwar et al., 2018). Yet among these elements, individual behavioral characteristics such as beliefs, ethics, and actions remain the most influential (Kuratko et al., 2021).

In Islamic contexts, Islamic work ethics (IWE) represent a critical behavioral dimension, as they have been shown to significantly influence work outcomes (Rokhman, 2010). IWE encourage forward-thinking behavior (Islam et al., 2021), enhance performance, and strengthen employee motivation and commitment (Hassi et al., 2021; Aflah et al., 2021). These attributes highlight the importance of considering Islamic work ethics when examining entrepreneurial behavior.

In the context of Yemen, small and medium-sized enterprises (SMEs) represent the backbone of the national economy, accounting for the majority of private-sector activity and employment. Yemeni SMEs operate under challenging conditions marked by economic instability, limited financial access, and disrupted supply chains, all of which significantly influence their entrepreneurial orientation. Yemen's SMEs face numerous challenges that significantly influence their entrepreneurial orientation, beyond the impact of Islamic work ethics alone. The ongoing civil conflict, weak governance structures, and the predominance of the informal economy hinder the growth and sustainability of SMEs in the country. These socio-political and economic conditions create an environment of uncertainty, limiting access to formal financial resources and restricting opportunities for innovation, risk-taking, and proactiveness. Additionally, the weak enforcement of regulatory frameworks and the prevalence of informal business practices undermine the effect of Islamic work ethics, which may otherwise promote disciplined and ethical entrepreneurship. As such, the study of EO in Yemen must account for these broader contextual factors, which are likely to play a more significant role than ethics alone in shaping entrepreneurial behavior within SMEs in the country. These conditions make the examination of Islamic work ethics particularly relevant, as ethical values often guide managerial behavior when formal institutional support is weak. The economic environment of Yemeni SMEs makes this study especially important for understanding how ethical principles affect entrepreneurial decision-making in fragile contexts (Qaied & Basavaraj, 2020, Saleh & Manjunath, 2020).

The religious teachings of Islam promote financial independence and self-employment, yet many Islamic nations, including Yemen, show low entrepreneurial activity. Global reports indicate that entrepreneurial activity in developing economies is often constrained by instability, limited financial access, and weak regulatory environments. At the national level, Yemen continues to experience prolonged economic decline, institutional fragility, restricted capital availability, and challenges in the ease of doing business, all of which contribute to low levels of entrepreneurial orientation (Yemen Economic Memorandum, 2022). Locally, in the cities of Sana'a, Al-Hudaidah, and Taiz, where the study

participants operate small and medium-sized enterprises, challenges such as inconsistent market demand, security-related disruptions, and limited training in modern business practices are prevalent. At the same time, while Islamic values strongly shape daily work behaviors, the practical application of Islamic work ethics is often weakened by economic pressures and informal business practices (Ibrahim, 2018). These combined local and national challenges underscore the importance of examining the relationship between Islamic Work Ethics and Entrepreneurial Orientation in the Yemeni context.

The indicators of ease of doing business and entrepreneurial culture and actual entrepreneurial activities show limited progress. The apparent contradiction between religious support for entrepreneurship and Muslim reluctance to start businesses requires further investigation (Ayob & Saiyed, 2020).

Previous literature has largely ignored the effect of Islamic work ethics on entrepreneurial orientation, especially in small and medium-sized organizations. This study addresses this gap by exploring the impact of Islamic work ethics on entrepreneurial orientation in SMEs in Yemen.

In addition, Wales et al. (2011) and Wales (2015) emphasized the importance of deeper understanding of nature, antecedents, and consequences of entrepreneurial orientation, encouraging more studies that use both unidimensional and multidimensional scales. This study responds to that call by examining the effect of Islamic work ethics on a multidimensional scale of entrepreneurial orientation.

Furthermore, prior research has recommended investigating entrepreneurial orientation in diverse and specific contexts, particularly through emerging themes (Martens et al., 2016). This study contributes to filling this gap by examining entrepreneurial orientation within the context of small and medium-sized enterprises in Yemen.

This research contributes theoretically by enhancing the body of knowledge on Islamic work ethics and entrepreneurial orientation and practically by helping decision-makers in small firms recognize the ethical factors that influence entrepreneurial strategy.

The main objective of this study is to measure the relationship between Islamic work ethics and entrepreneurial orientation in small entrepreneurial organizations in Yemen. Building on the above discussion, this study is guided by specific research objectives.

2. Research Objectives

2.1 To examine the relationship between Islamic work ethics represented by effort, honesty, teamwork, and accountability and entrepreneurial orientation among small and medium enterprises in Yemen.

2.2 To provide contextual insights into how Islamic ethical principles shape entrepreneurial behavior within an Islamic and developing-country environment.

In line with these objectives, the study addresses the following research questions:

- 1) What is the relationship between Islamic work ethics (effort, honesty, teamwork, accountability) and entrepreneurial orientation in Yemeni SMEs?
- 2) How do Islamic ethical values shape entrepreneurial orientation within small and medium enterprises in Yemen?

3. Related Literature Review

3.1 Islamic Work Ethics

Understanding the concept of Islamic work ethics is very crucial, especially because previous literature concentrated on western styles of ethics such as the Christian work ethics (Ahmad & Owoyemi, 2012; Niswah et al., 2020). Islamic ethics is defined as a collection of a set of ethical rule, standards, and principle that guide followers to know what is right and what is wrong according to the Islamic Sharia law (Abbasi et al., 2009; Beekun, 2006). Islamic

work ethics is the same as Islamic ethics, yet it is more oriented about the behavior in the workplace. These principles depended on the Holy Qur'an and the commands of the prophet Mohammed (peace be upon him). Islamic work ethics mixes work and faith. These two concepts are very important. Everyone needs to work, and work would not be fruitful without having standards of ethics.

Islamic work ethics need welcoming environment to flourish. Islamic work ethics is not a unidimensional concept. It has economic, social, and moral dimensions (Ali & Al-Owaidan, 2008). Islamic work ethics a multidimensional concept needs organizational environments with high levels of commitment and continuity. This is because Islamic work ethics has personal and social relationships (Kamaluddin & Manan, 2010). Thus, Islamic work ethics needs healthy environment that secure good interaction between individual and their social networks. Others raised the importance of religiosity and Islamic culture as strong triggers of Islamic work ethics (Attahiru et al., 2016)

3.2 Importance of Islamic Work Ethics

Islamic work ethics is an important issue. This importance came after witnessing several ethical scandals in business domain such as WorldCom and the Natural gas giant company Enron. Islamic work ethics has significant impact on job satisfaction (Niswah et al., 2020; Zaman et al., 2013). Islamic work ethics has significant impact on work outcomes (Rokhman, 2010). It stimulates the future orientations of organizations' leaders (Islam et al., 2021). Islamic work ethics also has been shown to have significant impact on employee's performance (Hassi et al., 2021). This is achieved by creating higher level of Islamic motivation and commitment (Aflah et al., 2021).

Islamic work ethics is affected by several factors. a study on a group of royal Malaysian air force found significant effect of individual behavior and organizational commitment on Islamic work ethics (Husin & Kernain, 2020). Another study applied on a group of project-based Pakistani organizations found moderating effect of Islamic work ethics on the relationship between human resource management practices and project success (Khan & Rasheed, 2015).

3.3 Islamic Work Ethics and Business Functions

Islamic work ethics has strong relationships with several business functions. This study found that higher level of Islamic work ethics built higher level of morale among employees (Suryanto, 2016). The higher level of morale created more comfortable working environment in which employees showed higher level of satisfaction.

Another study on 156 employees from small and medium sized companies in Malaysia studied the effect of Islamic work ethics on employees' commitment (Salahudin et al., 2016). This study used a technique called structural equation modeling to test the relationship between Islamic work ethics and employees' commitment. Islamic work ethics was treated as a unidimensional construct while employees' commitment was treated as multidimensional constructs with three sub dimensions. The three employees' commitment sub dimensions were: continuance commitment, affective commitment, and normative commitment. Islamic work ethics found to have positive and significant impact on all three sub dimensions of the employees' commitment.

A study tried to understand the role of Islamic work ethics on the organizational citizenship in a group of Jordanian press companies (Alhyasat, 2012). This study adopted a descriptive paradigm to analyze their data. The study utilized a filed survey technique to collect their data. This study showed strong research design because they used a stratified random sample to make solid inferential about their population parameters. The final sample of this study consisted of 204 questionnaires from top management members of the Jordanian press

companies. They found low level of employees' commitment among the employees in the Jordanian press companies. On the other hand, this study found high level of Islamic work ethics among these employees. The conclusion of this study indicated that there was no significant effect of Islamic work ethics on employees' citizenship attitude (Alhyasat, 2012). Organization citizenship and its connection Islamic work ethics was assets in another study. A study on 215 respondents' educational institutions. this study showed significant and positive effect of Islamic work ethics on organizational citizenship behavior (Murtaza et al., 2016) . In addition, Islamic work ethics showed positive and significant effect on knowledge sharing behavior in these educational institutions.

In the service industry, Islamic work ethics played a role in previous literature. Reviewing previous literature on several service sectors such as health care industry, education, financial services, public and private sectors, telecommunication companies revealed interesting findings. Islamic work ethics found to have significant effect on employees Islamic spirituality (Suib & Said, 2017). Islamic work ethics also found to improve employees' principles and values.

In the telecommunications companies of Pakistan, a study utilized correlational modeling to investigate the impact of Islamic work ethics on organization performance. Using a sample of 114 managers, the study showed strong impact of Islamic work ethics on business performance (Abbasi et al., 2011). The study proposed a solution for financial crises through organizations' performance. They argued that improving ethics can help organizations bounce back during unexpected crises.

Job satisfaction and Islamic work ethics also have connection. As study on 80 nurses for health care facilitates in Pakistan, found significant and positive correlation between Islamic work ethics and job satisfaction. Moreover, a positive and significant causal impact of Islamic work ethics on job satisfaction (Haroon et al., 2012). The study recommended human resource management to implement strategies that improve Islamic work ethics.

The relationship between Islamic work ethics and job satisfaction was studied in more than one country. The same positive impact was found in the agriculture sector in Pakistan. A study found positive impact of Islamic work ethics on job satisfaction and organizational commitment (Marri et al., 2012). In Indonesia, a study on a group of 220 employees form banking sector in Indonesia found positive impact of Islamic work ethics on organizational job satisfaction and commitment (Athar et al., 2016; Nasution & Rafiki, 2020).

Organizations need innovation to survive and to improve their performance. A study on a sample 120 employees for telecommunication companies in Pakistan tried to understand the relationship between Islamic work ethics and innovation capacity (Farrukh et al., 2015). positive and significant impact of Islamic work ethics on innovation capability. The study recommended organizations manage their workplace and link it to the employee work ethics. Even though the study investigates the role of Islamic work ethics, it recommended adopting any work ethics form any other religion. Islamic work ethics also found to link organization learning , innovation and performance (Abbasi et al., 2012)

Abusive supervision is another important managerial problem. A study on as sample of 224 respondents from the hospitability sector in Pakistan investigated the relationship between abusive supervision and knowledge hiding behaviors (Khalid et al., 2018). Islamic work ethics showed moderating effect on the relationship between abusive supervision and knowledge hiding behaviors. The moderate effect showed negative impact on this relationship. This means that high level of Islamic work ethics reduces the impact of abusive supervision on knowledge hiding behavior.

Previous studies also tried to link Islamic work ethics to several factor at the same time. A massive study on a group of 2491 employee form 20 hotels in South Sulawesi found significant impact of Islamic work ethics on employees performance , job satisfaction and work

culture (Saban et al., 2020). The same effect on employees performance also found in another study conducted on a group of banks' employees in Pakistan (Imam et al., 2013).

Family businesses also took place in the Islamic work ethics literature. Family owners conflict found to affect employee's performance. This effect was negatively affected by the effect Islamic work ethics (Widyarini & Muafi, 2021).

Islamic work ethics also found to play moderating and mediating role on direct relationships. On a group of 120 employees from private education and banking system, Islamic work ethics found to moderate the relationship between job stress and work outcomes (Ajmal & Irfan, 2014). Islamic work ethics plays moderating role on the relationship between organizational justice and job satisfaction (Tubagus, 2018). Islamic work ethics also found to have moderating effect on the relationship between challenge and hindrance stressors and job satisfaction (Tufail et al., 2017). It shows moderating role on the relationship between projects' employee empowerment and project success (Mubarak et al., 2021). Islamic work ethics also play a moderating role between big five personality traits and knowledge sharing (Javaid et al., 2022).

3.4 Entrepreneurial Orientation (EO)

Entrepreneurial orientation is defined as "Entrepreneurial Orientation was revealed in literature as a firm-level strategic posture in term of mainly three dimensions: risk-taking, innovativeness, and proactiveness" (Al-Awlaqi et al., 2021, p. 2). Entrepreneurial orientation is "a firm's strategic posture towards entrepreneurship" (Anderson et al., 2015, p. 1580; V. Gupta & Gupta, 2015). Entrepreneurial orientation is considered as a unidimensional and multidimensional concept (Covin & Lumpkin, 2011; Jeffrey & William, 2011; W. Wales et al., 2011). Others found potential to treat entrepreneurial orientation as a multiplicative construct (George & Marino, 2011; Slevin & Terjesen, 2011)

Entrepreneurial orientation needs strategic decision-making participation and strategy information sharing to help companies improve their performance (Covin et al., 2006). Recent Yemeni studies emphasize that entrepreneurial orientation remains low due to prolonged conflict, weak institutional support, limited access to finance, and high market uncertainty, all of which restrict risk-taking and innovation among SMEs (Al-Hakimi et al., 2021; Al-Awlaqi et al., 2021). Yemeni researchers also highlight that cultural and religious values strongly shape work behavior, noting that Islamic work ethics can either support or hinder entrepreneurial actions depending on how consistently these values are practiced in unstable environments (Al-Mamary & Alshallaqi, 2022, Al-Mamry et al., 2020a). Gender dynamics further complicate this relationship, as women in Yemen experience restricted economic participation, limited mobility, and fewer entrepreneurial opportunities, which affects how Islamic work ethics manifest in the workplace and influences overall entrepreneurial engagement (Al-Awlaqi et al., 2021). These contextual factors reinforce the relevance of examining Islamic work ethics and entrepreneurial orientation together, especially in the Yemeni SME sector, where ethical values, cultural expectations, and structural barriers interact in complex ways. Incorporating these insights strengthens the conceptual foundation of the current framework by showing how IWE dimensions relate to EO behaviors within Yemen's unique socio-economic and gendered environment.

3.5 Importance of entrepreneurial orientation

In their famous papers on entrepreneurial orientation, Lumpkin & Dess (1996a) and Lumpkin & Dess (2015) and Lumpkin & Dess (1996b) explained the importance of entrepreneurial orientation and how it affects business' performance. They explained the relationship among entrepreneurial orientation dimension, environmental factors, organizational factors, and performance. In this study, entrepreneurial orientation was treated as the main independent

variable that can affect performance through moderating effects from environmental factors and organizational factors. The relationship between entrepreneurial orientation and performance was found sustainable and long lasting (Johan Wiklund, 1999). This relationship between entrepreneurial orientation and performance was found in private and public sectors (O'Shea et al., 2005)

Entrepreneurial orientation has very strong linkage with small businesses. entrepreneurial orientation plays strong role on small businesses performance (Keh et al., 2007; Wiklund & Shepherd, 2005) . Small business context showed robust and relationship between entrepreneurial orientation and performance (Aloulou & Fayolle, 2005; Chow, 2006; Lechner & Gudmundsson, 2012). This relationship was found in different cultural contexts (Rauch et al., 2009). Entrepreneurial orientation and its subdimensions found to have significant impact on non-financial performance of small and medium sized business (Cho & Lee, 2018; Shan et al., 2016). Moreover, entrepreneurial orientation is linked to higher level of international performance (Jantunen et al., 2005). Entrepreneurial orientation is essential for small and medium enterprises growth (Moreno Ana M. & Casillas José C., 2008; Runyan et al., 2008).

Entrepreneurial orientation was also linked to the business venture startups. Strong relationship was found between start-ups decision and entrepreneurial orientation proactiveness, and risk-taking (Boso et al., 2013; Kropp et al., 2008). Entrepreneurial orientation helps startups keep their momentum toward international commitment (Ripollés-Meliá et al., 2007) . In venture startups, leaders are the key person in the organization. Thus, entrepreneurial orientation was divided into two main categories: organization entrepreneurial orientation and individual entrepreneurial orientation. Individual entrepreneurial orientation was found to have strong effect on individual entrepreneurial intention in venture startups (Koe, 2016).

Entrepreneurial orientation is important factor in building strong knowledge of cultural in organizations. entrepreneurial orientation plays role in creation of learning organizations (Wang, 2008). Entrepreneurial orientation mediates the relationship between knowledge based resources and firm performance (Wiklund & Shepherd, 2003). Knowledge creation process found to mediate the relationship between entrepreneurial orientation and enterprises' performance (Li et al., 2009). Business orientations are important strategies businesses should focus on. Customer orientation, market orientation, marketing orientation, and entrepreneurial orientation. Entrepreneurial orientation is the most important. Previous studies were confused between entrepreneurial orientation and market orientation. Although there are some similarities , entrepreneurial orientation and market orientation are totally different business philosophies (Miles & Arnold, 1991). Entrepreneurial orientation was studied in family firms. Entrepreneurial risk taking was categorized as the most important factor of entrepreneurial orientation in family businesses (Cruz & Nordqvist, 2012; Naldi et al., 2007).

3.6 Research gap

Few previous literatures investigating the effect of Islamic work ethics on entrepreneurial orientation, especially in small and medium-sized organizations. While there is a broad understanding of the importance of Islamic work ethics in shaping individual behaviors and decisions, the specific influence of these ethics on entrepreneurial practices within small and medium-sized enterprises (SMEs) has not been sufficiently explored, particularly in the context of Yemen. This study tries to fill in this gap and explore the impact of Islamic work ethics on entrepreneurial orientation in small and medium-sized enterprises in Yemen.

Moreover, Wales et al. (2011) and Wales (2015) raised the importance of understanding in more in-depth the nature, antecedents, and consequences of entrepreneurial orientation. They encourage more qualitative studies about entrepreneurial orientation to be conducted in the future. They also encourage doing research on using unidimensional and multidimensional

scales of entrepreneurial orientation. In response to this call, this study examines the effect of Islamic work ethics on a multidimensional scale of entrepreneurial orientation, which adds depth to the existing research on how different ethical values shape entrepreneurial behaviors in specific contexts. This study filled in this gap by studying the effect of Islamic work ethics on a multidimensional scale of the entrepreneurial orientation.

Previous studies recommended studying entrepreneurial orientation in different contexts. Such studies have emphasized the importance of contextualizing entrepreneurial orientation in emerging and socio-culturally specific environments to understand how local factors influence entrepreneurial behavior. Previous literature recommended studying entrepreneurial orientation through emerging themes in specific contexts (Martens et al., 2016). This study filled in this gap and studies entrepreneurial orientation in small and medium-sized companies in Yemen.

3.7 Conceptual Model

This research investigates the connection between Islamic work ethics and entrepreneurial orientation by creating a specific model for small and medium-sized enterprises operating in Yemen. The strategic posture of entrepreneurial orientation stands as a fundamental performance influencer, which affects firms through their three core elements of innovativeness, proactiveness, and risk-taking. A strong entrepreneurial orientation needs both strategic planning and individual behavioral elements and ethical standards and values. The business outcomes of Islamic work ethics, which include effort and honesty, and teamwork and accountability, have demonstrated influence, but their direct relationship with entrepreneurial orientation remains understudied in Islamic business settings. The existing literature fails to examine this relationship, particularly in small and medium-sized enterprises. Wales et al. (2011, 2015) requested additional research about entrepreneurial orientation antecedents through multidimensional scales, and Martens et al. (2016) suggested studies in specific business environments. The proposed conceptual model connects four Islamic work ethics sub dimensions to the three main entrepreneurial orientation dimensions, which provides both theoretical value to the literature and practical guidance for Yemeni SMEs. Figure 1 shows the conceptual model.

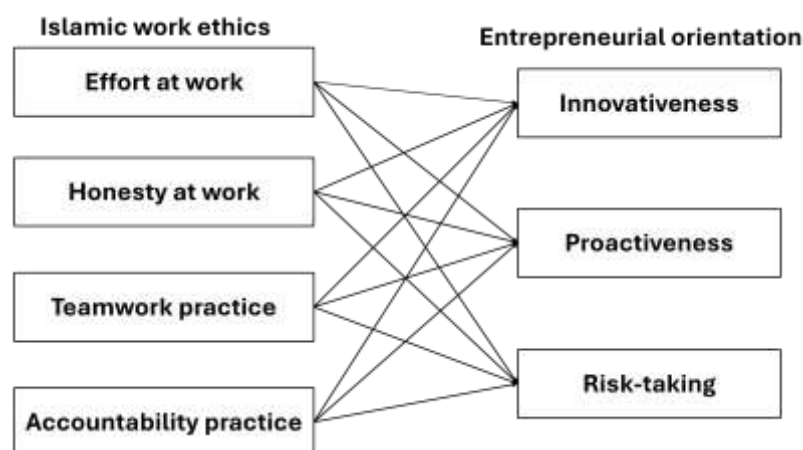


Figure 1 conceptual framework

4. Methodology

4.1 Research Design

The research employed a quantitative explanatory research design to study the connection between Islamic work ethics and entrepreneurial orientation. The research design uses numerical data and statistical tools to test hypotheses, which produce objective and reliable results. The research used a cross-sectional survey approach to gather data through

standardized questionnaires. The quantitative design was chosen because it enables researchers to detect patterns and validate relationships while minimizing personal biases.

Although the study initially adopted an explanatory and descriptive orientation, the nature of the research problem required a quantitative methodological approach. The objective of the study was to measure the statistical relationship between the dimensions of Islamic work ethics and entrepreneurial orientation, which necessitates numerical data and the use of correlation-based analysis. Therefore, quantitative design was justified as the most appropriate approach to ensure objective measurement, generalizability, and the ability to apply statistical techniques such as canonical correlation analysis. The population of SMEs in Yemen is considered large and not fully documented due to ongoing instability; thus, the population was treated as infinite. The sample size of 137 respondents aligns with recommendations for multivariate statistical analysis and exceeds minimum thresholds for canonical correlation. A non-probability purposive sampling method was adopted, targeting owners and managers of legally registered private SMEs who met the study's inclusion criteria and were accessible during the data collection period.

4.2 Population and Sampling

The research focuses on owners who operate small and medium entrepreneurial businesses in Yemen. The population size remains unknown because these enterprises operate dynamically while remaining unregistered. The research team selected organizations from Sana'a, Al-Hudaidah, and Taiz through non-probabilistic sampling methods. The research team analyzed 137 valid responses from the total number of participants.

The study used non-probability purposive sampling in three cities Sana'a, Al-Hudaidah, and Taiz due to accessibility and feasibility, but excluded rural SMEs, which limits the generalizability of the findings. Additionally, the gender distribution was heavily skewed with 94% male respondents, reflecting the gender dynamics of the Yemeni SME sector. These limitations are discussed further in the limitations section, as they may affect the representation of female entrepreneurs.

4.3 Instrumentation & Data Collection

The research data collection method involved self-administered structured questionnaires, which were divided into three sections that included demographics, Islamic work ethics, and entrepreneurial orientation. The five-point Likert scale served to evaluate attitudes through responses ranging from 1 (strongly disagree) to 5 (strongly agree). The Islamic work ethics construct measured through the scale developed by Khadijah et al. (2015) included four dimensions, which were effort, honesty, teamwork, and accountability. The assessment of entrepreneurial orientation dimensions (innovativeness, proactiveness, risk-taking) used validated scales from Al-Awlaqi et al. (2021) and Al-Mamary et al. (2020a) and Lumpkin et al. (2009).

The research collected primary data directly from respondents using structured questionnaires. Due to the ongoing conflict in Yemen and the absence of a centralized, reliable database of SMEs, the list of active private small and medium enterprises was obtained through the local chambers of commerce and business associations operating in the cities of Sana'a, Al-Hudaidah, and Taiz. These organizations maintain practical working lists of registered and unregistered SMEs within their areas. As official national SME records are not currently updated or accessible, the authors focused on privately operating SMEs in these three cities, where data access was feasible and secure.

The questionnaire was administered onsite through direct distribution to SME owners and managers, with support from the partnering business associations. The same organizations also facilitated the retrieval of completed questionnaires. Although the exact number of

functioning SMEs cannot be precisely determined under current conditions, approximately 180 owners and managers were contacted based on the available lists, and 137 valid responses were obtained, representing an estimated response rate of about 76%. The challenging conditions of war and limited mobility prevented broader distribution across multiple cities, making the cities of Sana'a, Al-Hudaidah, and Taiz the primary focus for data collection.

4.4 Reliability

To assess the internal consistency of the measurement instrument, Cronbach's Alpha was calculated for each construct. As shown in Table 1, all constructs demonstrated high reliability, with Cronbach's Alpha values exceeding the recommended threshold of 0.70 (Hair et al, 2010). The scores ranged from 0.881 to 0.925, indicating excellent internal consistency. Specifically, an individual's effort at work ($\alpha = 0.925$), honesty ($\alpha = 0.911$), teamwork ($\alpha = 0.915$), and accountability ($\alpha = 0.892$) all showed strong reliability. Similarly, the entrepreneurial orientation dimensions risk-taking ($\alpha = 0.881$), proactiveness ($\alpha = 0.904$), and innovativeness ($\alpha = 0.902$) also achieved high reliability scores, confirming the consistency and suitability of the instrument for this study.

Table 1 Cronbach's Alpha Score for the Instrument's Constructs

Construct	Number of Items	Cronbach's Alpha score
Individual's effort at work	6	.925
Individual's honesty at work	6	.911
Individual's teamwork practice	6	.915
Individual's Accountability practice	5	.892
Risk taking	4	.881
Proactiveness	5	.904
Innovativeness	5	.902

5. Research Results

5.1 Demographic Profile

A total of 184 questionnaires were distributed manually to owners and individuals working in SMEs in Yemen. Out of these, 137 complete questionnaires were returned and valid for analysis, resulting in a response rate of 74.5%. Frequency analysis was conducted to summarize the demographic characteristics of the respondents, including gender, age, education level, and years of experience. As shown in Table 2, the majority of respondents were male (94%), while only 6% were female. In terms of age, 72% were between 30 and 40 years old, 24% were aged 41–50, and 4% were under 30. Regarding education, most respondents held a bachelor's degree (89%), while 11% held a master's degree. For work experience, 60% had between 6 and 10 years of experience, 28% had over 10 years, 12% had 2–5 years, and only 1% had less than 2 years. Table 2 shows the demographic profile.

Table 2 Demographic Profile

Demographic Characteristic	Category	Frequency	Percentage (%)
Gender	Male	129	94%
	Female	8	6%
Age	Under 30	6	4%
	30–40	98	72%
	41–50	33	24%

Demographic Characteristic	Category	Frequency	Percentage (%)
Education Level	Bachelor	122	89%
	Master	15	11%
Experience	Less than 2 years	1	1%
	2–5 years	16	12%
	6–10 years	82	60%
	Over 10 years	38	28%

Table 3 provides a detailed summary of the descriptive statistics for each item across the main constructs in the study: Islamic work ethics (effort, honesty, teamwork, accountability) and entrepreneurial orientation (risk-taking, proactiveness, innovativeness). For each item, the mean and standard deviation are presented, based on the five-point Likert scale used in the study. Most items fall within the “Agree” range (mean between 3.4 and 4.2), indicating generally positive responses from participants toward both Islamic ethical practices and entrepreneurial behaviors. A few items, particularly under effort and honesty dimensions, scored slightly lower, reflecting a more neutral perception. The highest mean (4.23) was observed in proactiveness item 5, indicating a strong agreement from participants regarding proactive behavior. Overall, the descriptive results suggest that respondents demonstrate a favorable attitude toward Islamic work values and entrepreneurial orientation, supporting the study's assumptions. Table 3 shows the descriptive statistics.

Table 3 Descriptive Statistics

Construct	Item Code	Mean	Std. Deviation	Descriptive Equivale
Effort at Work	EAW1	3.08	0.86	Neutral (2.6 - 3.4)
	EAW2	3.40	0.73	Agree (3.4 - 4.2)
	EAW3	3.24	0.65	Neutral (2.6 - 3.4)
	EAW4	3.28	1.01	Neutral (2.6 - 3.4)
	EAW5	3.50	1.09	Agree (3.4 - 4.2)
	EAW6	3.42	0.64	Agree (3.4 - 4.2)
Honesty at Work	HAW1	3.13	0.76	Neutral (2.6 - 3.4)
	HAW2	3.70	0.93	Agree (3.4 - 4.2)
	HAW3	3.49	0.95	Agree (3.4 - 4.2)
	HAW4	3.53	0.71	Agree (3.4 - 4.2)
	HAW5	3.51	0.89	Agree (3.4 - 4.2)
	HAW6	3.22	0.95	Neutral (2.6 - 3.4)
Teamwork Practice	TWP1	3.56	0.86	Agree (3.4 - 4.2)
	TWP2	3.47	0.87	Agree (3.4 - 4.2)
	TWP3	3.12	0.92	Neutral (2.6 - 3.4)
	TWP4	3.47	0.77	Agree (3.4 - 4.2)

Construct	Item Code	Mean	Std. Deviation	Descriptive Equivale
Accountability Practice	TWP5	3.97	0.97	Agree (3.4 - 4.2)
	TWP6	3.54	0.74	Agree (3.4 - 4.2)
	IAP1	3.89	0.99	Agree (3.4 - 4.2)
	IAP2	3.92	0.89	Agree (3.4 - 4.2)
	IAP3	3.57	0.68	Agree (3.4 - 4.2)
	IAP4	3.15	0.96	Neutral (2.6 - 3.4)
Risk-taking	IAP5	3.69	0.70	Agree (3.4 - 4.2)
	RT1	3.42	0.90	Neutral (2.6 - 3.4)
	RT2	3.86	0.96	Agree (3.4 - 4.2)
	RT3	4.02	0.83	Agree (3.4 - 4.2)
Proactiveness	RT4	3.63	0.33	Agree (3.4 - 4.2)
	PRO1	3.44	0.70	Neutral (2.6 - 3.4)
	PRO2	4.01	0.80	Agree (3.4 - 4.2)
	PRO3	3.69	0.93	Agree (3.4 - 4.2)
	PRO4	3.73	0.75	Agree (3.4 - 4.2)
Innovativeness	PRO5	4.23	0.92	Strongly Agree (4.2 - 5)
	INNV1	3.44	0.99	Neutral (2.6 - 3.4)
	INNV2	3.65	0.62	Agree (3.4 - 4.2)
	INNV3	3.75	0.76	Agree (3.4 - 4.2)
	INNV4	3.40	0.79	Neutral (2.6 - 3.4)
	INNV5	3.41	0.62	Neutral (2.6 - 3.4)

To provide a clearer understanding of the participants' attitudes toward Islamic work ethics and entrepreneurial orientation, Table 4 presents the mean values of the Likert scale responses across the various sub dimensions for each construct. These sub dimensions include the four components of Islamic Work Ethics (effort at work, honesty at work, teamwork practice, and accountability practice) and the three dimensions of Entrepreneurial Orientation (risk-taking, proactiveness, and innovativeness). The table summarizes how the respondents rated these constructs, offering insights into the overall trends and attitudes within the sample.

Table 4 Mean Values of Likert Scale Responses for Islamic Work Ethics and Entrepreneurial Orientation Dimensions

Research Question	Dimension	Sub dimension	Mean Value (5-1 Likert Scale)	Description/Notes
Q1: Relationship between Islamic Work Ethics and	Islamic Work Ethics (IWE)	Effort at Work	3.32	Mean value for effort at work (6 items)

Research Question	Dimension	Sub dimension	Mean Value (5-1 Likert Scale)	Description/Notes
Entrepreneurial Orientation	Entrepreneurial Orientation (EO)	Honesty at Work	3.43	Mean value for honesty at work (6 items)
		Teamwork Practice	3.52	Mean value for teamwork practice (6 items)
		Accountability Practice	3.64	Mean value for accountability practice (5 items)
		Risk-taking	3.73	Mean value for risk-taking (4 items)
		Proactiveness	3.82	Mean value for proactiveness (5 items)
		Innovativeness	3.53	Mean value for innovativeness (5 items)
Research Question	Dimension	Sub dimension	Mean Value (5-1 Likert Scale)	Description/Notes

Table 4 presents the mean values for the Likert scale responses regarding Islamic Work Ethics (IWE) and Entrepreneurial Orientation (EO) sub dimensions. For Islamic Work Ethics, the highest mean value was for accountability practice (3.64), followed by teamwork practice (3.52), honesty at work (3.43), and effort at work (3.32), suggesting that participants place more emphasis on responsibility, collaboration, and honesty than on individual effort. In terms of Entrepreneurial Orientation, proactiveness (3.82) and risk-taking (3.73) were viewed as highly important, indicating that participants see these traits as central to entrepreneurship. Innovativeness (3.53), while still considered important, received a slightly lower rating.

Overall, the results highlight that Islamic Work Ethics are generally valued in the workplace, especially in areas like accountability and teamwork, while Entrepreneurial Orientation is strongly linked to proactive and risk-taking behaviors.

5.2 Canonical Correlation Analysis

5.2.1 Assessment of Multivariate Normality Using Mahalanobis Distance

In this study, multivariate normality was assessed using the Mahalanobis distance test. The critical Mahalanobis distance value at $p < 0.001$ for the given number of variables is 14.07. Since the maximum Mahalanobis value in this dataset is 12.917, which is below the critical threshold, the assumption of multivariate normality is considered to be satisfied. Table 5 shows the Multivariate Normality Test.

Table 5 Multivariate Normality Test

	Minimum	Maximum	Mean	Std. Deviation	N
Mahalanobis Dist.	0.597	12.917	6.949	2.327	137

5.2.2 Significance of the Relationship between the Two Sets

The significance of the relationship between the two variable sets was assessed using Wilks' Lambda (see Table 6). The results show a statistically significant relationship between the two variable sets ($p < 0.001$), confirming that at least one canonical function explains a significant amount of shared variance.

Table 6 Significance Test of the Canonical Relationship

Test Name	Value	Approx. F	Hypoth. DF	Error DF	Sig. (F)
Wilks' Λ	0.0539	57.831	12	344.24	0.000

5.2.3 Canonical Correlation Results

The first canonical function explains the vast majority of the shared variance (83%), with a canonical correlation of 0.911 (see Table 7), indicating a very strong relationship between the two variable sets. Subsequent functions contribute negligible additional variance and are not practically meaningful.

Table 7 Canonical Correlation Summary

Root No.	Eigenvalue	% Variance	Cumulative %	Canonical Corr.	Squared Corr.
1	16.5905	99.67%	99.67%	0.9112	0.8301
2	0.0390	0.23%	99.91%	0.1937	0.0375
3	0.0152	0.09%	100%	0.1224	0.0150

5.2.4 Canonical Loadings

Tables 8 and 9 present the canonical loadings for Set 1 (entrepreneurial orientation variables) and Set 2 (Islamic work ethics variables), respectively. In Set 1, all three variables risk-taking, proactiveness, and innovativeness show strong negative loadings on the first canonical function (-0.9096 to -0.9243), indicating their substantial contribution to the first canonical variate. Similarly, in Set 2, effort at work, honesty at work, teamwork, and accountability also exhibit strong negative loadings on the first canonical function (-0.8924 to -0.9224), suggesting these variables heavily influence the first variate in this set. The strong loadings in Function 1 for both sets imply that the first canonical function captures the most meaningful relationship between entrepreneurial orientation and Islamic work ethics. Loadings on the second and third functions are notably weaker and more inconsistent, suggesting they contribute less to the overall relationship.

Table 8 Set 1 canonical loadings

Variable	1	2	3
Risk taking	-.9096	.270	.077
Proactiveness	-.9207	-.193	.142
innovativeness	-.9243	.0016	-.264

Table 9 Set 2 canonical loadings

Variable	1	2	3
Effort at work	-.9224	2.33	1.11
Honesty at work	-.9196	-.768	-2.57
Teamwork	-.9104	-2.242	1.61
Accountability	-.8924	.6554	-.148

5.3 Hypotheses Testing

The hypotheses testing was conducted using canonical correlation analysis, and the results are presented in Table 10. The findings confirmed the main hypothesis, showing a statistically significant relationship between Islamic work ethics and entrepreneurial orientation in small entrepreneurial organizations in Yemen. Additionally, all twelve sub-hypotheses (H1 to H12) were accepted, indicating significant positive relationships between each sub dimension of Islamic work ethics (effort, honesty, teamwork, and accountability) and the three dimensions of entrepreneurial orientation (innovativeness, proactiveness, and risk-taking). These results provide strong empirical support for the proposed conceptual framework and reinforce the role of Islamic ethical values in shaping entrepreneurial behaviors. Table 10 shows the hypotheses testing results according to canonical correlation analysis.

Table 10 Research Hypotheses Testing Results

#	Hypotheses	Result	p-value
H _{main}	There is a significant relationship between Islamic work ethics and entrepreneurial orientation in small entrepreneurial organizations in Yemen.	Accepted	p < 0.001
H1	Effort at work -----> Innovativeness	Accepted	p < 0.001
H2	Effort at work -----> Proactiveness	Accepted	p < 0.001
H3	Effort at work -----> Risk-taking	Accepted	p < 0.001
H4	Honesty at work -----> Innovativeness	Accepted	p < 0.001
H5	Honesty at work -----> Proactiveness	Accepted	p < 0.001
H6	Honesty at work -----> Risk-taking	Accepted	p < 0.001
H7	Teamwork practice -----> Innovativeness	Accepted	p < 0.001
H8	Teamwork practice -----> Proactiveness	Accepted	p < 0.001
H9	Teamwork practice -----> Risk-taking	Accepted	p < 0.001
H10	Accountability practice -----> Innovativeness	Accepted	p < 0.001
H11	Accountability practice -----> Proactiveness	Accepted	p < 0.001
H12	Accountability practice -----> Risk-taking	Accepted	p < 0.001

6. Research Discussions

The research examined the connection between Islamic work ethics and entrepreneurial orientation within small and medium-sized businesses operating in Yemen. The research employed a quantitative method to gather cross-sectional data from 137 owners and managers operating these businesses. The study used canonical correlation analysis to evaluate the relationship between these two constructs. The research established robust and meaningful connections between Islamic work ethics sub dimensions and entrepreneurial orientation sub dimensions. The research results confirm earlier studies which demonstrated how Islamic work ethics affect employee motivation and innovation and performance outcomes (Aflah et al., 2021; Abbasi et al., 2011). While the strong correlations between Islamic work ethics and entrepreneurial orientation observed in this study are noteworthy, it is crucial to consider the contextual factors that may moderate or exacerbate these relationships. In Yemen, SMEs are deeply impacted by the ongoing civil conflict, informal business practices, and the challenges posed by weak governance. These external factors complicate the clear application of Islamic work ethics in entrepreneurial practices. For instance, while Islamic ethics encourage proactivity and risk-taking, the political and economic instability in Yemen often forces business owners and managers to adopt more reactive and cautious behaviors. Therefore, the distinctiveness of IWE and EO in the Yemeni context may be influenced as much by the broader socio-economic and governance-related challenges as by cultural and ethical values alone.

The research established that Islamic effort at work demonstrated a substantial connection with entrepreneurial innovativeness and proactiveness and risk-taking. The owners' and managers' strict work efforts lead to enhanced comprehension which results in innovative product and process and service development. The organization's commitment drives proactive market actions and strategic risk-taking for pursuing growth opportunities.

The research established that Islamic honesty in the workplace directly linked to entrepreneurial innovativeness and proactiveness and risk-taking. The workplace honesty level allows managers and owners to create innovative and proactive work environments which promote ethical risk-taking behavior. The research demonstrates how Islamic values create trust and commitment and transparency in entrepreneurial practices (Khadijah et al., 2015). The three dimensions of entrepreneurial orientation showed substantial correlation with Islamic teamwork practice. The Islamic ethical framework of Muamalat supports team collaboration through consultation, which leads people to provide complete backing to group initiatives. Teamwork practice allows teams to create innovative solutions and new ideas while developing proactive behaviors and risk acceptance through mutual support and collective decision-making, which matches the Islamic concept of Tawakul (trust in God) in Islamic behavioral models.

The research established that Islamic accountability practices directly influence innovativeness, proactiveness, and risk-taking. Leaders who practice accountability demonstrate initiative in their work responsibilities while accepting responsibility for errors and working to achieve superior results. These behaviors match high entrepreneurial orientation because they develop responsibility and commitment traits, which are vital for innovation and strategic foresight and uncertainty acceptance in small business environments.

The research results support the study's hypotheses by showing that Islamic work ethics as a multidimensional construct has a significant effect on small Yemeni firms' entrepreneurial behavior. The research results meet previous requirements for context-specific entrepreneurial orientation studies (Wales et al., 2011; Martens et al., 2016) and use multidimensional models as recommended.

6. Implications

The research findings generate substantial implications for theory, practice, and policy, particularly for small and medium-sized enterprises operating in Yemen. The research shows that Islamic work ethics, including effort and honesty and teamwork and accountability, directly affect key entrepreneurial orientations such as innovativeness and proactiveness and risk-taking. The research approach that studies Islamic ethics and entrepreneurial orientation as multiple dimensions shows how ethical beliefs affect entrepreneurial actions. The multidimensional approach enhances research methods for studying entrepreneurship in various cultural and religious settings.

Business owners and managers should develop organizational cultures based on Islamic work ethics to achieve practical benefits. The promotion of values such as dedication to hard work, honesty, teamwork, and accountability can enhance innovation, responsiveness to market changes, and a willingness to take calculated risks. The integration of Islamic values into workplace standards and employee training and decision-making processes creates a competitive advantage for businesses operating in regions where religion impacts daily operations.

The implementation of Islamic ethical principles in entrepreneurship support programs and development initiatives will boost their cultural effectiveness and relevance. Educational programs that teach work ethics according to Islamic teachings will create stronger connections with entrepreneurs and their community members. An ethical business environment based on Islamic values helps connect religious beliefs with economic participation which creates better

conditions for entrepreneurial development in regions with underdeveloped entrepreneurship despite strong ethical principles.

7. Limitations and Directions for Future Research

This research investigated the effects of Islamic work ethics on entrepreneurial orientation in small and medium entrepreneurial enterprises in Yemen. The study delivers important findings but contains several limitations. It focused exclusively on small and medium-sized entrepreneurial enterprises, excluding large enterprises from the population. As a result, the findings may not apply to all business types operating in Yemen. Additionally, the research was geographically limited to specific locations, excluding rural SMEs, which are a significant part of Yemen's economy. The study relied on questionnaires for data collection, which depend on participant perceptions that may not fully represent actual behaviors or ethical practices.

One limitation of this study is the non-probability purposive sampling method, which focused on SMEs in only three cities Sana'a, Al-Hudaidah, and Taiz. This limits the generalizability of the findings, particularly as rural SMEs, which are a significant part of Yemen's economy, were not included. Future research could expand the geographical scope to include rural areas and other regions of Yemen, providing a more comprehensive view of the impact of Islamic work ethics on entrepreneurial orientation across different types of SMEs. Additionally, the study's gender distribution was heavily skewed, with 94% of respondents being male. This may limit insights into female entrepreneurship in Yemen, and future studies should explore the gender dynamics in SME ownership and management to better understand how Islamic work ethics and entrepreneurial orientation manifest across genders.

Further research should address these limitations by investigating the connection between Islamic work ethics and entrepreneurial orientation in larger businesses. Expanding the geographical scope to include a broader range of Yemeni businesses and conducting comparative research across different countries could offer valuable insights into how cultural and contextual factors influence the implementation of Islamic work ethics. Additionally, alternative research methods, including qualitative and observational approaches, should be incorporated to enhance understanding of Islamic work ethics' impact on entrepreneurial behavior in actual business environments.

8. Conclusion

This research examined the connection between Islamic work ethics and entrepreneurial orientation in Yemeni small and medium-sized enterprises. The research employed a quantitative method with canonical correlation analysis to collect cross-sectional data from 137 owners and managers operating these enterprises. The analysis showed that Islamic work ethics sub dimensions, including effort and honesty and teamwork and accountability, are strongly and statistically significantly related to entrepreneurial orientation dimensions of innovativeness and proactiveness and risk-taking.

The research findings demonstrate that Islamic work ethics serve as a fundamental influence on the entrepreneurial actions of small and medium-sized business operations. The study demonstrates that organizations that adopt Islamic ethical values in their culture develop meaningful innovation, proactive strategies, and calculated risk-taking abilities. The ethical and entrepreneurial alignment produces better business results while building a sustainable entrepreneurial system based on cultural and religious principles.

Therefore, this study emphasizes the practical importance of integrating Islamic work ethics into business practices. Owners and managers are encouraged to strengthen and apply these ethical principles as a strategic tool to foster an entrepreneurial mindset and enhance competitiveness. The research contributes both theoretically by addressing a key gap in the

literature and practically by offering actionable insights for enhancing entrepreneurial orientation through ethical frameworks in the context of Yemen and similar environments. Based on the findings of this study, several recommendations are proposed to support SME owners, policymakers, and business practitioners in Yemen. First, enterprise owners and managers are encouraged to strengthen the application of Islamic work ethics particularly effort, honesty, teamwork, and accountability as these ethical principles were shown to significantly enhance innovativeness, proactiveness, and risk-taking among SMEs. Second, government agencies and local business associations should provide targeted training programs that integrate Islamic ethical values with modern entrepreneurial practices to help SMEs achieve stronger competitive performance. Third, policymakers should develop support mechanisms, such as mentoring initiatives and financial facilitation programs, that encourage ethically grounded entrepreneurial behavior. Finally, future researchers are encouraged to examine additional mediating or moderating factors that may influence the relationship between Islamic work ethics and entrepreneurial orientation, especially within other regions of Yemen to broaden the applicability of the findings.

References

- Abbasi, A. S., & Rana, A. H. (2012). Impact of Islamic work ethics, reward system and organizational environment on citizenship behavior of employees. *Science International-Lahore*, 24(4), 513-519.
- Abbasi, A. S., Rehman, K. U., & Afsar, S. (2009). Propensities of Tajik, Uzbek and Russians towards Islamic Work Ethics. *Journal of Qafqaz University*, 28(2), 78-78.
- Abbasi, A. S., Rehman, K. U., & Bibi, A. (2011). Islamic Work Ethics: How it Affects Business Performance. *Actual Problems of Economics*, 12(1), 312-328.
- Aflah, K. N., Suharnomo, S., Mas'ud, F., & Mursid, A. (2021). Islamic Work Ethics and Employee Performance: The Role of Islamic Motivation, Affective Commitment, and Job Satisfaction. *The Journal of Asian Finance, Economics and Business*, 8(1), 997-1007. <https://doi.org/10.13106/jafeb.2021.vol8.no1.997>
- Ahmad, S., & Owoyemi, M. Y. (2012). The concept of Islamic work ethic: An analysis of some salient points in the prophetic tradition. *International Journal of Business and Social Science*, 3(20), 116-123.
- Ahmad, Z., Rahim, N. A., Chulan, M., Ab Wahab, S. A., & Mat Noor, A. N. (2019, April). Islamic work ethics and organizational citizenship behavior among Muslim employees in educational institutions. In *Proceedings of the Second International Conference on the Future of ASEAN (ICoFA) 2017-Volume 1: Business and Social Sciences* (pp. 455-464). Singapore: Springer Singapore.
- Ajmal, M., & Irfan, S. (2014). Understanding the moderating role of Islamic work ethics between job stress and work outcomes. *IOSR Journal of Business and Management*, 16(1), 62-67.
- Al-Awlaqi, M. A., Aamer, A. M., & Habtoor, N. (2021). The effect of entrepreneurship training on entrepreneurial orientation: Evidence from a regression discontinuity design on micro-sized businesses. *The International Journal of Management Education*, 19(1), 100267. <https://doi.org/10.1016/j.ijme.2018.11.003>
- Ali, A. J., & Al-Owaihan, A. (2008). Islamic work ethic: A critical review. *Cross Cultural Management: An International Journal*, 15(1), 5-19. <https://doi.org/10.1108/13527600810848791>
- Al-Mamary, Y. H. S., Abdulrab, M., Alwaheeb, M. A., & Alshammari, N. G. M. (2020a). Factors impacting entrepreneurial intentions among university students in Saudi Arabia: testing an integrated model of TPB and EO. *Education+ Training*, 62(7/8), 779-803.
- Al-Mamary, Y. H., & Alshallaqi, M. (2022). Impact of autonomy, innovativeness, risk-taking, proactiveness, and competitive aggressiveness on students' intention to start a new venture. *Journal of Innovation & Knowledge*, 7(4), 100239.
- Al-Mamary, Y. H., Alwaheeb, M. A., Alshammari, N. G. M., Abdulrab, M., Balhareth, H., & Soltane, H. B. (2020b). The effect of entrepreneurial orientation on financial and non-financial performance in Saudi SMES: a review. *Journal of critical Reviews*, 7(14), 270-278.
- Anwar, M., Khan, S. Z., & Khan, N. U. (2018). Intellectual capital, entrepreneurial strategy and new ventures performance: Mediating role of competitive advantage. *Business and Economic Review*, 10(1), 63-93.
- Athar, M. R., Shahzad, K., Ahmad, J., & Ijaz, M. S. (2016). Impact of Islamic work ethics on organizational commitment: Mediating role of job satisfaction. *Journal of Islamic Business and Management*, 6(1), 397-416.

- Attahiru, M. S., Al-Aidaros, A. H., & Yusof, S. B. M. (2016). Moderating role of hisbah Institution on the relationship of Religiosity and Islamic culture to Islamic work ethics in Nigeria. *International Review of Management and Marketing*, 6(8), 125-132.
- Ayob, A. H., & Saiyed, A. A. (2020). Islam, institutions and entrepreneurship: evidence from Muslim populations across nations. *International journal of Islamic and Middle Eastern finance and management*, 13(4), 635-653.
- Beekun, R. I. (2006). *Islamic business ethics* (No. 2). International Institute of Islamic Thought (IIIT).
- Conte, F., Cerasuolo, M., Fusco, G., Giganti, F., Inserra, I., Malloggi, S., Di Iorio, I., & Ficca, G. (2021). Sleep continuity, stability and organization in good and bad sleepers. *Journal of Health Psychology*, 26(12), 2131–2142. <https://doi.org/10.1177/1359105320903098>
- Covin, J. G., & Lumpkin, G. T. (2011). Entrepreneurial Orientation Theory and Research: Reflections on a Needed Construct. *Entrepreneurship Theory and Practice*, 35(5), 855–872. <https://doi.org/10.1111/j.1540-6520.2011.00482.x>
- Covin, J. G., Green, K. M., & Slevin, D. P. (2006). Strategic process effects on the entrepreneurial orientation–sales growth rate relationship. *Entrepreneurship theory and practice*, 30(1), 57-81.
- Crick, J. M., & Crick, D. (2021). *Coopetition as an entrepreneurial strategy: Focus on the wine sector*. World Encyclopedia of Entrepreneurship, 26–39.
- Cruz, C., & Nordqvist, M. (2012). Entrepreneurial orientation in family firms: A generational perspective. *Small Business Economics*, 38(1), 33–49. <https://doi.org/10.1007/s11187-010-9265-8>
- Diandra, D. (2021). Digital Entrepreneurial Strategy (Des) as A New Concept Business Strategy from offline to online post Pandemic Covid—19. *Majalah Ilmiah Bijak*, 18(2), 245–253. <https://doi.org/10.31334/bijak.v18i2.1776>
- Gans, J. S., Stern, S., & Wu, J. (2019). Foundations of entrepreneurial strategy. *Strategic Management Journal*, 40(5), 736–756. <https://doi.org/10.1002/smj.3010>
- George, B. A., & Marino, L. (2011). The epistemology of entrepreneurial orientation: Conceptual formation, modeling, and operationalization. *Entrepreneurship theory and practice*, 35(5), 989-1024.
- Gupta, S., Tuunanen, T., Kar, A. K., & Modgil, S. (2023). Managing digital knowledge for ensuring business efficiency and continuity. *Journal of Knowledge Management*, 27(2), 245-263.
- Gupta, V., & Gupta, A. (2015). The concept of entrepreneurial orientation. *Foundations and Trends® in Entrepreneurship*, 11(2), 55-137.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). *Multivariate data analysis*. (7th Ed.). Hoboken.
- Haroon, M., Zaman, H. F., & Rehman, W. (2012). The relationship between Islamic work ethics and job satisfaction in healthcare sector of Pakistan. *International Journal of Contemporary Business Studies*, 3(5), 6–12.
- Hassi, A., Balambo, M. A., & Aboramadan, M. (2021). Impacts of spirituality, intrinsic religiosity and Islamic work ethics on employee performance in Morocco: The mediating role of intrinsic motivation. *Journal of Islamic Accounting and Business Research*, 12(3), 439–456. <https://doi.org/10.1108/JIABR-05-2020-0131>
- Hitt, M. A., Sirmon, D. G., Li, Y., Ghobadian, A., Arregle, J.-L., & Xu, K. (2021). Institutions, industries and entrepreneurial versus advantage-based strategies: How complex, nested environments affect strategic choice. *Journal of Management and Governance*, 25(1), 147–188. <https://doi.org/10.1007/s10997-020-09504-2>

- Husin, W. N. W., & Kernain, N. F. Z. (2020). The Influence of Individual Behaviour and Organizational Commitment towards the Enhancement of Islamic Work Ethics at Royal Malaysian Air Force. *Journal of Business Ethics*, 166(3), 523–533. <https://doi.org/10.1007/s10551-019-04118-7>
- Ibrahim, A. (2018). Islamic work ethics and economic development in Islamic countries: Bridging between theory and reality. In *International Conference of Moslem Society* (Vol. 2, pp. 43-50).
- Imam, P., & Kpodar, K. (2013). Islamic banking: how has it expanded? *Emerging Markets Finance and Trade*, 49(6), 112-137.
- Islam, T., Ahmed, I., Usman, A., & Ali, M. (2021). Abusive supervision and knowledge hiding: The moderating roles of future orientation and Islamic work ethics. *Management Research Review*, 44(12), 1565–1582. <https://doi.org/10.1108/MRR-06-2020-0348>
- Javaid, M., Jaaron, A. A., & Abdullah, N. H. B. (2022). Relationship between Big Five personality traits and knowledge sharing behaviour: moderating role of Islamic work ethics. *Cross Cultural & Strategic Management*, 29(4), 798-823.
- Kamaluddin, N., & Ab Manan, S. K. (2010). The conceptual framework of Islamic work ethic (IWE). *Management & Accounting Review (MAR)*, 9(2), 1-14.
- Khadijah, A., Kamaluddin, N., & Salin, A. (2015). Islamic work ethics (IWE) practice among employees of banking sectors. *Middle-East Journal of Scientific Research*, 23(5), 924–931.
- Khalid, M., Bashir, S., Khan, A. K., & Abbas, N. (2018). When and how abusive supervision leads to knowledge hiding behaviors: An Islamic work ethics perspective. *Leadership & Organization Development Journal*, 39(6), 794–806. <https://doi.org/10.1108/LODJ-05-2017-0140>
- Khan, A. S., & Rasheed, F. (2015). Human resource management practices and project success, a moderating role of Islamic Work Ethics in Pakistani project-based organizations. *International Journal of Project Management*, 33(2), 435–445. <https://doi.org/10.1016/j.ijproman.2014.08.006>
- Krishnan, C. S. N., Ganesh, L. S., & Rajendran, C. (2022). Entrepreneurial Interventions for crisis management: Lessons from the Covid-19 Pandemic's impact on entrepreneurial ventures. *International Journal of Disaster Risk Reduction*, 72, 102830. <https://doi.org/10.1016/j.ijdrr.2022.102830>
- Kuratko, D. F., Hornsby, J. S., & McKelvie, A. (2023). Entrepreneurial mindset in corporate entrepreneurship: Forms, impediments, and actions for research. *Journal of Small Business Management*, 61(1), 132-154.
- Laronde, A. (2021). Business Continuity and Recovery Planning Guide. *Organization Studies*, 12(1), 23–38.
- Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, 21(1), 135-172.
- Lumpkin, G. T., Coglisier, C. C., & Schneider, D. R. (2009). Understanding and measuring autonomy: An entrepreneurial orientation perspective. *Entrepreneurship theory and practice*, 33(1), 47-69.
- Marri, M. Y. K., Sadozai, A. M., Zaman, H. M. F., & Ramay, M. I. (2012). The impact of Islamic work ethics on job satisfaction and organizational commitment: A study of agriculture sector of Pakistan. *International Journal of Business and Behavioral Sciences*, 2(12), 32–45.
- Martens, C. D. P., Lacerda, F. M., Belfort, A. C., & Freitas, H. M. R. de. (2016). Research on entrepreneurial orientation: Current status and future agenda. *International Journal of*

- Entrepreneurial Behavior & Research*, 22(4), 556–583.
<https://doi.org/10.1108/IJEER-08-2015-0183>
- Miles, M. P., & Arnold, D. R. (1991). The Relationship between Marketing Orientation and Entrepreneurial Orientation. *Entrepreneurship Theory and Practice*, 15(4), 49–66.
<https://doi.org/10.1177/104225879101500407>
- MK Alhyasat, K. (2012). The role of Islamic work ethics in developing organizational citizenship behavior at the Jordanian Press Foundations. *Journal of Islamic Marketing*, 3(2), 139-154.
- Modarresi, S. J., Abbaspour, A., & Modarresi Saryazdi, A. S. (2022). Identifying the strategic drivers of entrepreneurial university by a meta-synthesize. *Karafan Journal*, 19(2), 37-69. <https://doi.org/10.48301/kssa.2022.286292.1533>
- Mubarak, N., Khan, J., Yasmin, R., & Osmadi, A. (2021). The impact of a proactive personality on innovative work behavior: the role of work engagement and transformational leadership. *Leadership & Organization Development Journal*, 42(7), 989-1003.
- Muhammad, F., Butt, S., & Mansori, S. (2015). Innovation capability: The role of Islamic work ethics. *Journal of Asian Business Strategy*, 5(7), 125-131.
<https://doi.org/10.18488/journal.1006/2015.5.7/1006.7.125.131>
- Murtaza, G., Abbas, M., Raja, U., Roques, O., Khalid, A., & Mushtaq, R. (2016). Impact of Islamic Work Ethics on Organizational Citizenship Behaviors and Knowledge-Sharing Behaviors. *Journal of Business Ethics*, 133(2), 325–333.
<https://doi.org/10.1007/s10551-014-2396-0>
- Nasution, F. N., & Rafiki, A. (2020). Islamic work ethics, organizational commitment and job satisfaction of Islamic banks in Indonesia. *RAUSP Management Journal*, 55, 195-205.
- Niswah, F., Mutmainah, L. L., Hadyantari, F., Nurwahidin, N., & Huda, N. (2020). Do Indonesian Muslims have intention to participate on cash waqf through Fintech? *ICSGS 2019*, 97-114.
- Qaied, M. M. M., & Basavaraj, K. (2020). Impact of the Current Conflict on Small and Medium-sized Enterprises in Yemen, *International Journal for Modern Trends in Science and Technology*, 6(8), pp. 213-220 .<https://doi.org/10.46501/IJMTST060837>
- Rokhman, W. (2010). The Effect of Islamic Work Ethics on Work Outcomes. *EJBO – Electronic Journal of Business Ethics and Organization Studies*, 15(1), 21–27.
- Saban, D., Basalamah, S., Gani, A., & Rahman, Z. (2020). Impact of Islamic work ethics, competencies, compensation, work culture on job satisfaction and employee performance: the case of four star hotels. *European Journal of Business and Management Research*, 5(1), 1-8.
- Sadozai, A. M., Marri, M. Y. K., Zaman, H. M. F., Yousufzai, M. I., & Nas, Z. (2013). Moderating role of Islamic work ethics between the relationship of organizational commitment and turnover intentions: A study of public sector of Pakistan. *Mediterranean journal of social sciences*, 4(2), 767-775.
- Salahudin, S. N. bin, Baharuddin, S. S. binti, Abdullah, M. S., & Osman, A. (2016). The Effect of Islamic Work Ethics on Organizational Commitment. *7th International Economics & Business Management Conference (IEBMC 2015)*, 35, 582–590.
[https://doi.org/10.1016/S2212-5671\(16\)00071-X](https://doi.org/10.1016/S2212-5671(16)00071-X)
- Saleh, M. A. K., & Manjunath, K. R. (2020). Small and Medium Enterprises in Yemen: Aiming for resurgence while facing managerial obstacles. *Shodh Sanchar Bulletin*, 10(40), 6-12.

- Shepherd, D. A., & Patzelt, H. (2021). *Entrepreneurial Strategy: Starting, Managing, and Scaling New Ventures*. (p. 131). Springer Nature. <https://doi.org/10.1007/978-3-030-78935-0>
- Slevin, D. P., & Terjesen, S. A. (2011). Entrepreneurial orientation: Reviewing three papers and implications for further theoretical and methodological development. *Entrepreneurship Theory and Practice*, 35(5), 973-987.
- Suib, F. H., & Said, M. F. (2017). A Review of Islamic Work Ethics and Spirituality Concepts in Service Industry. *Journal of Nusantara Studies (JONUS)*, 2(2), 282–294. <https://doi.org/10.24200/jonus.vol2iss2pp282-294>
- Suryanto, T. (2016). Islamic Work Ethics and Audit Opinions: Audit Professionalism and Dysfunctional Behavior as Intervening Variables. *Al-Iqtishad: Jurnal Ilmu Ekonomi Syariah*, 8(1), 49–64. <https://doi.org/10.15408/aiq.v8i1.2508>
- Tubagus, I. (2018). Islamic Work Ethic and Organizational Justice Implementation in Reaching Accountant's Job Satisfaction. *Academy of Accounting and Financial Studies Journal*, 22(1), 1–11.
- Tufail, M., Shahzad, K., Gul, A., & Khan, K. (2017). The impact of challenge and hindrance stressors on job satisfaction: moderating role of Islamic work ethics. *Journal of Islamic Business and management*, 7(1).
- Wales, W. J. (2015). Entrepreneurial orientation: A review and synthesis of promising research directions. *International Small Business Journal*, 34(1), 3–15. <https://doi.org/10.1177/0266242615613840>
- Wales, W. J., Gupta, V. K., & Mousa, F.-T. (2011). Empirical research on entrepreneurial orientation: An assessment and suggestions for future research. *International Small Business Journal*, 31(4), 357–383. <https://doi.org/10.1177/0266242611418261>
- Yemen Economic Memorandum (2022) ,*Yemen Resilience, Recovery, and Reconstruction Trust Fund*. World Bank.
- Yuli Widyarini, Y., & Muafi, M. (2021). The influence of work-family conflict and Islamic work ethics on employee performance. *International Journal of Research in Business and Social Science (2147-4478)*, 10(3), 177-188.