

# Resilience Engineering in Human Resource Practices: A Strategic HRM Model for Volatile SME Environments in the Saudi Arabian Kingdom

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## Abstract

This literature review examines how Resilience Engineering principles can be combined with the Strategic Human Resource Management (SHRM), to ensure an adaptive HRM approach to support Small and Medium Enterprises (SMEs) working in a volatile environment, specifically in Saudi Arabia. SMEs, which constitute more than 99 % of all the private firms, have been greatly affected in the view of the Saudi Vision 2030 and the economic reforms that are being taken to revive the economy of the nation, such as labor localization (Saudization), shortage of talent, changes in regulations and shocks to the market. Resilience Engineering serves as an example of safety-critical industries that form the basis of an adaptability, anticipation, and robustness framework that can be strategically used within HR systems. The review critically assesses the empirical evidence of employee resilience, resilient HR practices, theory on dynamic capabilities according to the role of HR in promoting agility in the workforce, psychological capital, proactive crisis management. It highlights the research literature-gap in SHRM-resilience integration in the Arab SME setting, the literature contains few works, either longitudinal activities or studies focusing on the region. The scope of the study is to propose a conceptual framework that would integrate resilience throughout the employee cycle, as well as congruent with cultural and institutional realities of Saudi SMEs. The review concludes with research gaps including the absence of standardized measures of resilience and the paucity of empirical work on resilience and HRM within the GCC context which is only a starting point of future inquiry and practice with regard to strategic HR management in the context of resilience.

**Keywords:** Resilience Engineering, Strategic Human Resource Management (SHRM), Small and Medium Enterprises (SMEs), Organizational Resilience, Saudi Arabia, Workforce Agility, Adaptive HRM, Saudization, Dynamic Capabilities, Vision 2030.

## 1. Introduction

In the current globalised world where economies are now harder to predict, the sustainability and adaptability of organisations, especially Small and Medium-sized Enterprises (SMEs) have become more important than ever before. Disruptions, such as geopolitical tensions, pandemics, digital transformations, and resource shortages all affect businesses but have been increasing in both frequency and intensity, compounding the challenges that businesses are forced to endure (Celestin & Sujatha, 2024). According to World Bank (2022) reports that over 30 % of all SMEs in the world felt seriously disturbed during the COVID-19 pandemic making those in volatile economies like the Middle East disproportionately more impacted. However, the Kingdom of Saudi Arabia has

a rapidly diversifying economy due to the Vision 2030 initiative, it continues to be vulnerable to changes in oil prices, international supply chain dynamics, as well as changing labor market laws (Alkhamis, 2017). SMEs represent almost 99 % of all private sector establishments in Saudi Arabia and provide more than 28 % of the GDP of the country (Hamid & Ahmed, 2024), securing their sustainability has turned into both a strategic and national priority.

The Saudi economy has long been dependent on oil revenues, which comprised a large share of export income (up to 80%) and the government income (up to 70%) as late as 2014 (Alsakran, 2014). As oil prices have experienced extreme variability recently, such as the price dropping below \$20 per barrel in April of 2020, the small

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and medium-sized enterprises in Saudi Arabia have been forced to adapt under new fiscal and operational restrictions (Alazemi, 2022). Although the Vision 2030 has provided a broad plan on how to diversify the economy and expand the contribution of the SME on GDP to 35 % by 2030, the journey is full of hurdles. Most SMEs in Saudi Arabia do not have access to capital, qualified human resource and good systems to handle their entities against risk. Moreover, structural changes in the labor market include Saudisation wherein companies are required to employ a specified number of Saudi nationals. Although this socially constructive policy, it commonly results in shortage of talents and HR complexity of SMEs (Almoabed, 2020). In this unstable context, the notion of resilience, long connected to fields of engineering and safety sciences, is now being redefined as an organisation strategic capacity that companies have to develop to ensure survival and success, especially SMEs.

Organisational resilience is the ability of an organisation to foresee, absorb and adapt to unforeseen shocks without losing essential operations. In this paradigm, human resource management (HRM) is an important component, whereby it directly determines how employees react during a crisis, how they overcome stress, and maintain performance (Kwiecień, 2023). Resilience Engineering, initially deployed in safety-critical domains, such as aviation and nuclear power, refers to adaptive capacity, system flexibility and failure-based learning, all of which are becoming recognised principles within the HRM field (Tordeux et al., 2024). The strategic approach to Human Resource Management (SHRM) and the focus on integrating the HR practices into the overall business goals present a coherent approach to implementing the resilience at the organisational levels. SHRM expands upon administrative HR roles to be a proactive facilitator of business strategy and that dynamic environments in particular (Bouaziz et al., 2018). This practice can be revolutionary to SMEs in Saudi Arabia: operational HR systems may enhance workforce flexibility, proactive talent growth, and enable organisational survival even in times of economic turmoil.

Instead of carried potential of applying the resilience principles within the sphere of SHRM practice, academic and practice-based frameworks, which unify the two areas together, seem to be limited, particularly within the framework of Saudi Arabian SMEs. An assessment of the literature on the existing research indicates that most of

the studies have examined SHRM in large organisations and resilience in emergency management in the public sector, yet there is limited literature that addresses SMEs in the emerging economies struggling to manage market uncertainty and concurrent change (Jian et al., 2024). Boin and Van Eeten (2013) address resilience in public organisations and Lengnick-Hall et al. (2011) address resilience as dynamic capability applied to HR systems, not many research studies present strategic roadmap adjusted to the SME limitations of access to resources, high employee turnover, and regulatory compliance recognised by (Störmer et al., 2024). Furthermore, the literature (Nurunnabi, 2020) supports that a relatively small proportion (35 %) of the Saudi Arabian SMEs is equipped with formal HR departments, which implies a pronounced gap in terms of capacity to introduce systematic resilience strategies.

A conceptual framework is needed to combine the principles of resilience engineering and SHRM practices excluding specifically the previous towards the existing volatile and culturally specific setting in Saudi Arabian SMEs. Therefore, the research questions, in this literature review, are as follows: (1) How can resilience engineering principles be adapted into effective HR practices to promote strategic agility in Saudi SMEs? (2) Which are the main obstacles and facilitators to the creation of a resilience-based SHRM model within the Saudi SME world? What are some of the practical steps that SMEs can consider to align HR operations with long-term stability and flexibility objectives?

In order to address these questions, this review integrates academic material in four interconnected areas, including fundamental principles of resilience engineering and SHRM, situational issues impacting SMEs in Saudi Arabia, existing empirical data on the connection between HR practices and resilience performance, and new paradigms of SHRM under highly turbulent conditions. Based on this synthesis, the review constructs a new situational-specific framework that contextualises resilience in SHRM and provides practical implications to managers, policymakers and researchers of SMEs. The review continues by highlighting significant gaps in existing literature and proposing directions to be taken in further empirical studies, especially those dealing with workforce development, HR measures of resilience, and culturally informed implementation processes in the Gulf region.

## 2. Theoretical Foundations

In the current era described by economic instabilities, geopolitical hazards, climate upheavals, and technological disturbances, organisations are in an immense pressure to change rapidly and maintain performance. A study published by Notoma (2025) shows that more than 70 % of companies had at least one major operational interruption over the past five years, and SMEs were the most susceptible to disruption due to under-resourced and inflexible operations within their organisations. Resilience has become prominent across industries, such as; supply chain, healthcare, human resources, and more, as the world has become too complex and unpredictable (Ekinci et al., 2022). In this theoretical section, the study examine the underpinning concepts of Resilience Engineering Theory and Strategic Human resource management (SHRM) and develop the integrated framework that incorporates the two concepts to provide the agility and survival of the SMEs, especially in the emerging Saudi Arabian economy.

### 2.1 Resilience Engineering Theory

Resilience Engineering was initially situated within the analysis of high-reliability and safety-critical systems, having originated due to major accidents in the nuclear power, air transport and oil and gas sectors. The idea was formalised in the early 2000s, when Hollnagel, Woods, and Leveson stated that conventional methods of risk management, based on the strive towards error elimination, were not enough when dealing with complex and dynamic environments, as discussed by Hill et al (2021). Moreover, it postulated a proactive capacity, that of resilience: the capacity of systems, not only to recover after being shocked, but to predict, adapt, and change before and in the face of change (Hollnagel et al., 2006). Resilience engineering has four main constructs i.e. flexibility, robustness, adaptive capacity, and anticipation. Flexibility means that an organisation adjusts routines and roles flexibly according to new changing demands. Robustness associates with the ability of a system to adapt to disturbances without serious impairment of its functionality. Adaptive capacity means the capacity of the organisation to rearrange resources or reorganise operations, whereas anticipation refers to the foresight into what can go wrong, as well as arranging systems to be prepared to counteract it (Mayar et al., 2022). Although these constructs were originally deployed in technical systems, an increasing number of researchers

have been able to generalise the concept of resilience engineering to the organisational and human realms. As in the example presented by a medical field, systems now define resiliency as the capacity to maintain patient care continuity in stressful situations (Branlat & Woods, 2010). Resilience in areas of human resource management emerges as the preparedness of the workforce, agile leadership styles, independence of employee, and sustained learning that are cultures. (Iyer & Malhotra, 2024). Roeder (2021) stated relations between organisational resilience and human behavior, which comprises psychological resilience and communication-based systems as essential drivers. Embedding resilience at the human systems level in SMEs is especially important as formal structures tend to be weak and there is a high dependency on individuals. A study performed by Hosen et al (2024) highlighted that the companies that had a high level of internal communication, proactive training, and cross-function cooperation had the better chances of displaying performing adaptive behavior during a crisis like COVID-19.

### 2.2 Strategic Human Resource Management (SHRM)

Strategic Human Resource Management (SHRM) is termed an extension of traditional practices of HRM and its purpose is to cause alignment of the workforce to long term goals and strategic direction of an organisation. SHRM extends administratively based operations like recruitment, and paying the personnel to ensure that the HR is fundamentally an initiator of business strategy. According to Wright and McMahan (1992), SHRM is described as the pattern of a planned HR deployments and activities and is designed to help an organisation to deliver on its objectives. It emphasises the long-term development of human capital, involvement of the human assets, as well as organisational culture, which contributes to the development of strategic resilience. Several models have shaped SHRM's theoretical foundations. The Best Fit model has been stressing the alignment between a particular business setting or phases of business lifecycle and HR strategies. As an example, an SME in growth-stage might emphasise on recruitment and development of skills, whereas, a mature organisation might emphasise on retention and succession planning. The Best Practice model however shows that there are specific HR practices that are universally applicable and effective no matter the context (performance-based rewards, employee empowerment and continuous training) (Johnstone, 2024).

The Resource-Based View (RBV) goes even deeper and places employees as those valuable (and therefore rare, inimitable, and non-substitutable) resources that help to make competitive advantage sustainable (Rantan, 2021). Therefore, strategic HRM does not only involve aligning policies but creating abilities that competitor firms have a hard time imitating. Ability-Motivation-Opportunity (AMO) model is complementary to these arguments as it suggests that HR practices should endeavour to develop the ability of the workers (training and development), motivation (incentives and recognition) and the possibilities to contribute (participative decision-making) (Obaid et al., 2022). These practices enhance performance and resilience of the employees when created strategically. SHRM becomes even more critical in turbulent environments. Organisations that had more flexible HR systems, good internal communication, and elements of decentralisation of decisions process were more adaptive, as witnessed during the COVID-19 crisis (Janssen et al., 2020). The case of Saudi Arabia SMEs the pressure of globalisation combined with the changing national policy SCs represented by Saudisation demands must not be overlooked implementations of SHRM can be of critical importance to dealing with the lack of talent, increasing the productivity of the workforce, and instilling changes readiness.

### **2.3 Integration of Resilience and SHRM**

The evolution of SHRM theory into resilience engineering is a necessary and logical step bearing in mind the increased demand on organisations to have systems that are strategic in line but also able to respond to volatility. The two frameworks are similar in that they both have fundamental themes e.g. anticipation, adaptability, learning and systemic coherence and can be mutually supplementary when used in combination. Theoretically, the area of convergence can be seen between the perspective of dynamic capabilities that theory which asserts the necessity of reconfiguring internal competence as a response to external change (Konlechner et al., 2018), and the resource-based view of SHRM which perceives people to be at the centre of organisational differentiation. Constructive interaction is enablement to strengthen through HR systems that are created to assist with strategy, although also with regard to developing adaptive capacities. A sample of such strategies would be, training in accordance to scenario planning, and preparing employees to handle

uncertainty, cross-functional teams are more flexible, and participative leadership would help in making decisions more resilient. Research indicates a series of organisations exercising resilience and the related emphasis strategies in intervention programs with strategic HRM as recording improved performance results. An example can be seen in 2021 research that assessed SMEs in turbulent markets and whose findings include that resilient HRM strategies enabled the former to recover 40 % more quickly than the latter. However, academic evidence shows a gap in well-developed models of combining resilience with SHRM, particularly among SMEs in non-Western settings, such as Saudi Arabia.

### **3. Contextualising Saudi Arabian SMEs**

In the new global environment, uncertainty appears to rise as businesses of any scope must tackle complex and interdependent crises: geopolitical conflict, inflationary pressures, energy market volatility, and digital disruption. Small and medium-sized enterprises (SMEs) are especially susceptible to these shocks; many of these companies may have scarce financial and managerial resources. Saudi Arabia is a country that has rapidly changed in the Middle East and is working towards becoming less dependent on oil and developing a resilient, diversified economy with its national Vision 2030 plan (Oladapo et al., 2023). The focus of this transformation is to empower its SMEs, which make up about 99.5 % of all businesses in the private sector and offer jobs to more than 75 % of the national labor force. Although this is a positive growth trend, Saudi SMEs are facing a very volatile environment with a serious structural and operational challenge. This section places in context the economic, regulatory, and organisational facts of SMEs in the Kingdom and pinpoints important SMEs human resource practice problems.

#### **3.1 Economic Landscape and Volatility**

Saudi Arabia's economic landscape is at a pivotal crossroads. The tendency to rely on oil revenues in the long-term has been considered to lead the country to the state of high vulnerability to oscillations in international oil markets. As an example, the oil price slump of 2014-2016 reduced government revenues by more than 50 %, with detrimental consequences on both the public and the private sector investment. In more recent times, in April 2020, during the COVID-19 pandemic and collapsing global supply chains, oil prices dropped to less than \$20/bbl

indicating the instability of a hydrocarbon-based economy. These market shocks extended to the SME sector where almost 30 % of businesses were either temporarily closed or suffered a shrinkage in operations because of a liquidity problem (World Bank, 2021).

To address this volatility, Saudi government established Vision 2030, a strategic plan on the diversification economy, privatisation of state activities, and the achievement of a knowledge-based society. One of the most significant cores of this vision is the growth and strengthening of SMEs, and the aim of increasing their share of the GDP up to 35 % by 2030 (Saudi Vision 2030 Report, 2023) was set. To accomplish this, the government has had to establish programs including the Authority which in 2016 was established to support SME financing, innovation, and regulatory reform. Moreover, such schemes as the National Development Fund and the Social Development Bank have granted over SAR 12 billion of financing to SMEs since 2020 (Ministry of Commerce, 2023). Despite such efforts, Saudi SMEs are vulnerable to regional instability, inflationary pressure (recorded its highest level of 6.2 % in 2022), and lack of access to international export markets which are boosting business volatility.

### ***3.2 Challenges Faced by Saudi SMEs***

Although SMEs in Saudi Arabia are supported by policies and there are ambitions to transform the SME sector, structural limits still hamper the growth of the SMEs and their flexibility. Probably the most urgent problem is that of workforce localisation, or Saudisation, as the practice is commonly referred to. This policy requires that there should be minimum quota of hiring the Saudi national in different sectors. Although it aims at alleviating unemployment amongst the citizens (current 8.6% in 2023), one of the effects of Saudisation has been the difficulties facing SMEs that can hardly find proficient Saudi employees or retain them. According to a survey conducted by the International Labour Organisation (ILO, 2022), more than 45 % of the owners of SMEs in Saudi Arabia reported struggling to meet localisation quotas owing to skills that do not match and salary levels that are high. Labor law complexity also adds to these pressures. Saudi Labor Law revisions in the recent past have placed more stringent labour regulations surrounding employment contracts, wage protection, and termination procedures raising administrative costs on small businesses. Moreover, the lack of expertise in some much-needed spheres, like digital advertising, engineering, and financial planning,

requires many SMEs to utilise the example of expatriate workforce, (Arner et al., 2020), which is not only confined by the visa policies but also cannot overcome various challenges of cultural assimilation.

Access to finance and technology is another significant constraint. Even though the SME lending portfolios have increased within Saudi banks over the past years, with SAR 205 billion lent to SMEs in Q4 2023 (SAMA, 2024), due to high collateral demands and a lack of credit history, micro and early-stage enterprises are less capable of growing or digitalising their businesses. The OECD (2023) reported that the Saudi SMEs are less likely to conduct business digitally (29 %), compared to OECD countries (more than 60 %). This technological deficit restrains productivity and the ability to engage within regional and global value chains. Moreover, organisational culture and leadership development present critical limitations. Most SMEs are privately owned by single command structure families, which dims innovation and freedom of operation within a company. The nature of leadership transitions is not always planned, strategic, and therefore, unstable and unsustainable of knowledge within the institutions. Such limitations prevent SMEs in developing their structural strength that can either foretell or react to market shocks thus making them weaker.

### ***3.3 HRM Practices in Saudi SMEs***

SMEs in Saudi Arabia continue to struggle with adopting the human resource management practices that are sometimes trailing best practices in other parts of the world. In contrast to big businesses where an HR department is usually involved, and the HR procedures are formalised, over 65 % of Saudi SMEs turn to an owner-manager or an administrative workforce to do HR tasks (AlHakbani et al., 2022). This results to inconsistency in recruitment, on boarding, performance management and employee development. The training on the one hand is often ad-hoc and unharmonised with the long term business objectives leading to skill gap and employee disengagement.

Moreover, the cultural and institutional norms have a great influence on HRM in Saudi SMEs. The tribal and hierarchical in nature of culture in Saudi Arabia frequently leads to stiff types of authority, which make participative management and employee empowerment difficult. As another example, the cultural dimensions developed by Hofstede position Saudi Arabia at a high power distance, demonstrating the tolerance to centralised power and status differentiation, which may also hold back the SMEs

in terms of innovation and internal communications. Institutional factors also influence HR practices. Hiring strategies are influenced considerably by regulatory frameworks including Nitaqat (system of classifications according to which companies are ranked according to their level of compliance with Saudisation) (Alotaibi, 2019). SMEs engage a significant number of Saudi workers mainly due to quota requirements other than through a strategic workforce planning. The HR that follows this compliance-driven strategy minimises the focus on performance or potential, thus becoming inefficient and wasteful of talents. It can also be observed that there is a disheartening disparity in terms of strategic HRM among Saudi SMEs. Small businesses rarely design HR planning alongside the business strategy, and the majority of them do not have performance-based evaluation mechanisms or formal leadership development initiatives.

#### **4. Resilience in HR Practices: A Review of Empirical Evidence**

With the world facing an increasingly high rate of crises, which include, but are not limited to, the COVID-19 pandemic, geopolitical tensions, inflationary pressures, and climate disasters, organisations in every sector have discovered that traditional reactionary approaches to crisis management are no longer sufficient, and that instead they must integrate resilience into the fabric of their organisations. A global survey conducted by Johnson et al (2024) found that 74 % of the organisations revealed that the development of workforce resilience became one of the highest strategic priorities due to the COVID-19 crisis. This especially applies to SMEs, which are usually not financially cushioned and diversified in their operations as compared to large companies. The human workforce typically forms the main source of performance and innovation in such enterprises. Consequently, Human Resource Management (HRM) practices (and the more so when accompanied with strategic foresight) can act as stabiliser as well as enhance flexibility. In this section, empirical studies and evidence on the effect of employee-level resilience and organisational-level HR systems on the survival and success of firms, especially during uncertainty times is thoroughly looked at.

##### **4.1 Employee Resilience and Organisational Performance**

Employee resilience has been a relatively new concept in the study of psychology, organisational behavior and even the related literature over the last 20

years. Resilience was traditionally regarded as a stable trait of character positivity, e.g. hardiness, emotional stability, and optimism, but is more often seen in the newly developing view as a process that can be developed and reinforced by environmental factors, such as workplace culture and HRM practices (Luthans et al., 2006). Such a transformation of fixed characteristics into modifiable processes has far reaching implications to the HR strategy where it is now implying that organisations could now deliberately develop resilience capacities within their workforce, rather than focusing only on pre-screening or hiring of resilient dispositions.

Studies conducted on the empirical basis have illustrated close connections between the psychological resilience and the organisational performance outcomes. An example of this is given by Saad (2020) who discovered that resilient employees are likely to be engaged, creative, and solve problems, especially in a crisis period. The organisations that had invested in employee wellbeing programs and mental health realised a productivity growth of 22 % in the COVID-19 pandemic period than those that did not (McKinsey & Company, 2021). In a similar study, Britt et al. (2016) compared the effectiveness of training programs intervention in adaptability and emotional regulation (civilian high stress jobs and military occupations) and found that there were substantial improvements in task performance and team cohesion.

HRM practices can be significant in establishing and maintaining employee resilience. Incidentally, training and development may be used to increase the confidence levels that employees have in overcoming change and dealing with ambiguity. The area that uses cross-training, scenario planning, and crisis simulations most effectively is the high-risk industry, which includes such spheres as healthcare, logistics, and manufacturing. Autonomy is another critical enabler. A study conducted by Ijaz & Tarar (2020) reveals that employees who have greater job autonomy have a 31 % chance of demonstrating proactive behaviors in case of disruption in the organisation. Autonomy builds psychological resilience that is an important element of control. These aspects of inclusion and diversity also enhance resilience, such as promotion of cognitive plurality, expanded perspectives, and enhanced team dynamics. According to the CIPD (2022), inclusive teams were 20 % more flexible when responding to the crisis in UK SMEs.

##### **4.2 Resilient HR Systems**

Individual resilience is an important aspect; however, it cannot prosper in isolation. Resilience needs such systems and structures in any organisation which integrate flexibility, communication and future-oriented planning in an organisation into day-to-day operations (Mokline & Abdullah, 2021). Resilient HR systems are defined as the strategic setup of HR-based policies and practices that combined adds value to the skills of the organisation to be shaken, adjusted, and come back stronger. The study on this topic has increased considerably as a result of the financial crisis in 2008 across the world and recently, due to the COVID-19 pandemic. The integration of flexible work arrangement is one of the major elements of resilient HR systems. The quick transfer to remote or hybrid as a model of operation allowed companies to preserve their employee retention and productivity at much higher rates during the pandemic. A study carried out in 2021 indicated that half of all workers in flexible jobs claimed to have higher levels of job satisfaction and organisational commitment as opposed to 30 % of those who hold office only and less flexible jobs. Another aspect of flexibility incorporates the redesigning of positions and duties through job crafting, which engulfs the way workers customise their work to match the available interests and talents. A study conducted by Wrzesniewski and Dutton (2001) revealed the increased levels of psychological ownership as a result of job crafting buffering the stress and increasing adapting capacity.

The other critical aspect is crisis strategies and workforce continuity. Most SMEs are not only poorly planned globally but even less are planned in Saudi Arabia with regard to workforce interference contingencies plans. A study conducted by Lengnick-Hall et al. (2011), revealed that those that have mechanisms of organisation in place to manage the crisis and business continuity policies were 37 % more likely to retain operational stability when external shocks were introduced. Individual and organisational resilience-building is equated to leadership and communication. Executive leadership can serve two purposes in providing strategic direction and emotional support at times when the status quo has been disrupted. The literature highlights that transformational and participative leadership style is effective in achieving resilient cultures. A longitudinal study conducted by Harland et al. (2005) revealed that the employees under transformational leaders were more prone to manifest resilience behavior, which includes perseverance and optimism, in the processes of

change. Open, transparent communication also fosters trust and reduces anxiety. The firms which adopted weekly check-ins, hotlines on mental health, and real-time communication, recorded a 17 % increase in the morale of the employees during the COVID-19 crisis.

#### **4.3 Strategic Interventions**

In addition to establishing a supportive framework, HRM also has the capability to promote strategic measures to match resilience with fundamental business objectives. Traditional ways of managing talents, which are oftentimes centered on stability and predictability, are in need of a makeover in the age of uncertainty to promote agility, potential, and cross-functional versatility. In volatile environments, talent management refers to recognition of high potential employees that could be redeployed or skill-enhanced in case of a new demand. Collings et al. (2019) conducted a study where agile talent pipelines gave technology and logistics industry players the opportunity to scale fast due to the disruptions caused by the pandemic. Retention is another critical issue during periods of volatility. A report by LinkedIn (2022) Global Talent Trends report found that those organisations that had a robust development and mobility structure experienced a turnover 41 % lower during economic downturns. HR-based practices, including mentoring programs, personalised career paths and performance-based incentives, increase retention, and are also found to strengthen the psychological contract between the employee and employer, which acts as a key buffer against uncertainty.

### **5. Strategic HRM in Volatile and Uncertain Environments**

#### **5.1 SHRM and Dynamic Capabilities**

The organisational agility and workforce adaptability are included in the list of critical survival factors in an uncertain future by more than 60 % of global business leaders based on the findings of the World Economic Forum (2023). In this context, Strategic Human Resource Management (SHRM) has stopped being the means of aligning HR action with long-term goals but one of the key episodes of business resiliencies and novelty. More especially in unstable conditions, where uncertainty is not the exception but the rule, SHRM has to be elastic, sensitive, and in a position to drive dynamic change throughout the organisation, into every level of it.

Changes in business environments have become more complex and rapid, which is why the dynamic capabilities theory has increasingly been used in SHRM paradigm. Dynamic capabilities as defined by Teece, Pisano and Shuen (1997) describe the capacity of an organisation to integrate, build and re-configure its internal and external competencies with an adaptive trend towards dynamic environments recognised by Kiiru (2015). When projected on human resources context, this theory indicates that SHRM is built in a way that it should not only be projected to manage existing talent requirement but is projected to develop skills, structures and cultures to enable them to adapt and compete under the prospect of volatile circumstances.

One of the main SHRM goals in this regard is promoting an agile state, which concerns the responsiveness of the workforce to make adjustments fast under the pressure of the external prompts. In particular, firms, such as Microsoft and Unilever, transformed whole workforces to work-at-home environments in just weeks with the help of digital infrastructure, cross-functional training, and flexible HR policies in the face of the COVID-19 pandemic. According to a worldwide KPMG (2021) survey, the probability that organisations having agile HR systems observed improved business performance during the pandemic was 2.3 times higher than that of their less agile peers.

Learning is another essential component of dynamic capability. Organisations should embrace learning cultures which aid the sharing of knowledge, experimentation and constant upskilling. Bersin by Deloitte (2022) also found that high-performing organisational firms spend almost 1.7 more dollars of the learning and development money per employee compared to average companies. SHRM may help to achieve this by harmonising training plans with training requirements that relate to the future profession needs, enabling occupation rotation, and by combining performance appraisal with personal growth objectives.

The third pillar is innovation. The practices of innovation-oriented HRM involve recruiting based on creativity, intrapreneurship promotion, and experimentation rewarding, even in a case where success might not be achieved. According to research by Jiang et al. (2012), the HR practice used to facilitate innovation in a company (e.g., creative problem-solving workshops, open idea forums) show a 16 % increase in initiatives of employee driven process improvement. SHRM is not only useful but also essential in SMEs in which the human capital in

various forms can be the most valuable asset; it helps to create an innovating workforce.

### **5.2 Crisis-Responsive SHRM Models**

Crisis expose the fragility or resilience of organisational systems. Since the financial crisis of 2008 through to the current pandemic and various twists and turns of supply chains because of geopolitical strains such as the Russia-Ukraine war, businesses have had to reconsider their people-management and shock response strategies over and over again. Such crises have triggered the development of crisis-driven SHRM models, which focus on planning beforehand, employee welfare, and organisation learning. The crisis of COVID-19 showed an extremely fast development of SHRM practices in such stakeholders of the economy as healthcare, logistics, and retail. Companies implemented disaster communication strategies, initiated psychological support activities, allowed flexible schedules and rotated the staff to key roles. A report by the Chartered Institute of Personnel and Development (CIPD, 2021) stated that 68 % of the companies that adopted crisis-resilient HR policies throughout the COVID-19 pandemic, have experienced the increased level of employee engagement and organisational cohesion.

The experience of successful companies provides some guidance to SHRM given the challenge. As an example, Johnson & Johnson introduced a crisis task force where HR top managers were included to address such issues as the safety of its employees, communications, and talent mobility. This was a cross-function approach that made decision-making prompt and prevented the loss of the workforce. Similarly, the Indian conglomerate Tata Group built a resilience model that emphasised both employee wellbeing and the necessity of remote work and leadership visibility, which led to the sustained productivity and low turnover during the pandemic (Tata Sons Annual Report, 2021). Furthermore, the companies that managed to apply the scenario planning to their approaches to HR were more ready to deal with workforce interruptions. Research by Ulrich and Smallwood (2021) clarifies that organisations that employed predictive HR analytics to model possible talent gaps, mental health risks, or operational choke points reacted 35 % quicker to the workforce-related crisis than those that failed to deploy predictive analytics. This predictive proactive trend is also becoming one of the characteristics of SHRM which is highly effective in

uncertain environment.

### **5.3 Application to SMEs**

While large companies may be able to develop entire SHRM systems, SMEs have different needs and must adopt a different strategy to address these challenges. Most SMEs in Saudi Arabia and in other emerging markets usually work on less than 250 employees and do not have a huge financial or technological strength and may therefore not have HR departments or the expertise of strategising. Monsha (2023) reports that in Saudi Arabia, just 18 % of SMEs have a formalised HR policy that thematically corresponds to business objectives, and less than one-tenth of SMEs work with digital HR tools. The resource limitations, such as insufficient cash flow, access to the training infrastructure, and HR expertise, imply that SMEs have to locate the cost-efficient and scalable SHRM solutions. Nevertheless, SMEs may not have all the resources but they usually make up with the strategic flexibility. SMEs have a tendency to make decisions quicker, and their organisational structures are less hierarchical, with a higher possibility of employees assuming multiple roles. These characteristics represent a rich environment on which agile SHRM, with special focus on people development, sharing knowledge and instant problem solving, can be applied.

A reliable case example is Almarai, a large-scale food manufacturing firm in Saudi Arabia, which actually collaborated well with its SMEs in supply chain to create combined training and flexible working hours. These programs assisted supplier small businesses to ensure they remained productive at the time of supply chain disruption in 2020. STC (Saudi Telecom Company) is another example that enabled tech-based SMEs with incubator programs targeting leadership training, digital transformations, and HR analytics, which have helped to improve their resilience in the face of a slowdown in the economy (Almalki, 2023). Strength-based employee empowerment is another important lever of resilience building within SME settings. The study conducted by Boxall and Purcell (2016) shows that the adoption of the participative approach to decision-making in small companies leads to employees that are better engaged, flexible, and focused on organisational objectives.

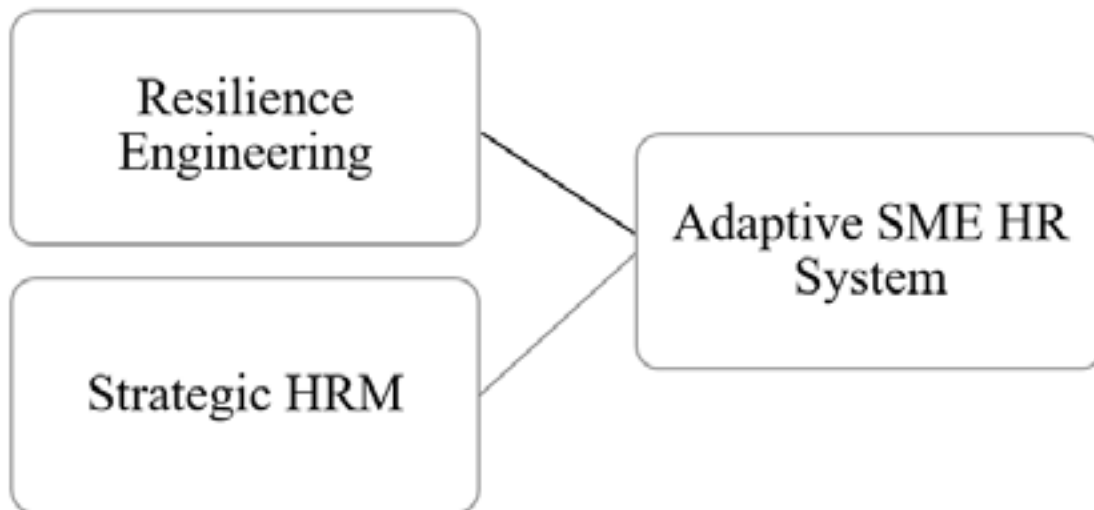
## **6. Toward a Resilience-Driven SHRM Framework for Saudi SMEs (900–1000 words)**

### **6.1 Conceptual Model**

The volatile and dynamic economic environment in the Kingdom of Saudi Arabia as well as national transformation objectives in line with vision 2030 necessitate a new way of managing human resources in the Kingdom especially in the small and medium sized enterprises (SME) segment. The structural weaknesses and resource limitation of Saudi SMEs, as well as the structural weaknesses and resource limitation of Saudi SMEs are no longer suitable with a conventional, fixed model of HRM. It needs rather a framework of SHRM on resilience basis which integrates the idea of Resilience Engineering with the strategic capability of HRM to develop adaptive, prospective and context-specific human systems. Based upon the reviewed literature, the suggested conceptual model places resilience not only as one of the response capabilities but of the strategic capabilities built into the HRM systems. Combination of Resilience Engineering with SHRM creates what could be called the concept of the Adaptive SME HR System, which includes four important, inter-dependent pillars:

- Proactive HRM characterised by focus on scenario analysis, risk mapping as well as workforce planning.
- Learning Culture: where constant training, knowledge transfer and reflexive practices facilitate flexibility and innovation.
- Workforce Agility, which is based on the fact that silence pastry job flexibility, cross-functional teams, and structures of empowerments enable an immediate reconfiguration of most of the roles when facing external shocks.
- Leadership Commitment, in which embracing transformational leadership and inclusive leadership contributes to resilience, based on its foundation on emotional intelligence, open communication, and strategy vision.

The framework is especially applicable to the Saudi SME environment, where such phenomena as rapid digitalisation, localisation of workforce (Saudisation), and cultural traditions come into contact. Integrating resilience into HRM on the structural and behavioral front could enable Saudi SMEs to develop sustainable organisations that can deal with uncertainty, change, and aid the realisation of the country economic diversification objectives.



*Figure 1. Conceptual Framework*

### **6.2 Components of the Proposed Model**

The Resilience-Driven SHRM Framework proposed to be developed to guide SMEs in Saudi Arabia is founded on a strategic synthesis between the Resilience Engineering and Strategic Human Resource Management (SHRM). This is the basic purpose behind this model to turn HRM as a dynamic capability; this way helping the business strategy but being prepared and acted upon in case of any disturbances and hence foresight and responsiveness being a part of the core premise. This segment discusses the major aspects of the model that include strategic alignment of HRM with risk anticipation, HR interventions based on resilience and the incorporation of resilience within the organisational culture in the entire employee lifecycle.

#### *Strategic Alignment of HR with Risk Anticipation*

In turbulent environments, HR needs to go beyond its administrative duties and start playing an active role in managing organisational risk. Having the strategic alignment in this regard entails the alignment of HR planning with enterprise risk assessment with the workforce strategies being planned in a manner that deals with the eventualities of disruption. This involves workforce susceptibility surveys, succession hazard investigating, and even staffing model stress imposing. As an example, an SME in the logistics industry, which finds supply chain interruptions as a top risk, the HR department should ensure that there is cross-trained personnel to change responsibilities in a short period.

Such alignment needs a change of mindset in Saudi

SMEs where most of the HR systems are reactive and compliance driven. HR departments must work with the top management to develop risk informed workforce plans together. As an example, workforce contingency plans during the COVID-19 crisis assisted numerous SMEs to redeploy people across the departments, continue operations, and assist employees experiencing stress. Risk anticipation-based SHRM ensures the development of proactive capabilities in organisations to anticipate, prepare, and mitigate crises instead of just responding to them.

#### *HR Interventions Across the Employee Lifecycle*

HR interventions have to be integrated at every phase of the employee lifecycle in order to establish organisational resilience, i.e. between recruitment and retirement. Every stage presents a possibility of enhancing personal and organisational resilience in times of uncertainty.

- **Recruitment and Selection: Recruiting resilience:** The selection practice must not only seek out those candidates who possess technical competencies but also those individuals who have the ability to be cognitively adaptive, possess emotional intelligence and are proactive. Important behavioral-based interviews, situational judgment assessment and the ones that are used to measure adaptability are vital. In the Saudi case, in which most SMEs focus on achieving Saudisation quotas, resilience-based

selection criteria can guide policy adherence with business requirements.

- **Training and Development:** Constant learning forms a significant aspect of resilience. The training should also be aimed at technical and soft skills, problem-solving, crisis, emotional control, and digital literacy. Microlearning tools and blended learning as well can be employed by SMEs to provide scalable and affordable training. When the pandemic arrived, several international companies incorporated scenario planning and role-play simulations to prepare workers to handle the unknown that are now being modeled by companies operating in the Gulf including STC and SABIC.
- **Performance Management:** Conventional performance management systems focus more on individualised measurements and do not encourage flexibility. An initiative-oriented approach includes behavioral drivers of the aspects of initiative, collaboration in the case of uncertainty, and failure learning. Instead of the annual appraisal, frequent feedback encourages reflection, and responsiveness. Connecting the results of the performance and resilience actions might yield a culture of accountability and constant improvement.
- **Retention and Your Career Development:** Long-run retention policy has to provide employees with discernible routes of development, and growth despite SME environments that are confined. To create resilience, HR can create dual-career ladders, schemes of job rotation, and mentorship programs that would help build job satisfaction and institutional experience, which is all essential to resilience. Since Saudi SMEs experience large attrition rates (average of 22% a year), it is essential that these kinds of interventions should be made to maintain talent continuity and organisational memory.

#### *Embedding Resilience in Organisational Culture*

Resilience should not just be operationalised in terms of systems and policies but also within organisational culture. A strong culture appreciates failure as a learning experience, communication availability, cooperation, and psychological security. It is a crucial role that leaders in every level model these behaviors. In SMEs where leadership roles are frequently confined to a small number of people, their dedication towards resilience should be evident, steady and principle-based. Resilience norms

may also be strengthened through the ideas of orientation, adaptation, and the rites and symbols or narratives that recognise them. An example includes debrief sessions following a failure or appreciation of finding solutions in times of crisis to give rise to a common belief of the ability to bring the organisation back to its feet. In the Saudi environment, where collectivist and hierarchical cultural norms are maintained, resilience has to be incorporated at the top with bottom-up contributions. This implies challenging front-line employees to speak up, exchange ideas, and act; a potential which is not highlighted in the culture of normal workplace practice in Saudi and which is critical to developing adaptive capacity.

#### **6.3 Contextual Adaptations (Saudi SMEs)**

The proposed resilience-based SHRM model is expected to succeed in Saudi SMEs, but it has to undergo adaptations to mirror the cultural, legal, and economic peculiarities of the Kingdom. The operating environment in Saudi Arabia is unique because of a high level of national identity, religious values, dynamic labor laws and forward looking national development plans.

#### *Cultural Considerations*

The cultural dimension of power distance and collectivism in Hofstede have a high score in Saudi Arabia and influence the way employees behave and the styles of managing people. Such environments have an enormous emphasis on hierarchies and allegiance to an authority figure. It may discourage free flow of information and empowerment of employees which are among the contributors to resilience. In order to do this, SMEs ought to make resilience concepts culturally compatible. As an example, the current social norms associated with shared responsibility can be reflected in the training of resilience by applying team-based learning methods. Furthermore, gender inclusion remains a sensitive area. Although the participation of female labor force is on the increase, having been 17% in 2017 and 36% in 2023 (GASTAT, 2023) still most of the SMEs are dominated by male populace. The resilient HRM systems are supposed to design inclusive policies that would exploit various points of view within it and foster equity which forms the basis of creativity and adaptability.

#### *Legal and Economic Factors*

The Saudi labor laws such as the Nitaqat system

have defined localisation quotas that determine personnel employment. Although such laws are created upon the goal of decreasing unemployment, they might stimulate SMEs to conduct hire-to-comply strategies (Albelali & Williams, 2022). Resilience or the legal compliance can be constructed by matching Saudisation and competency-based hiring in the proposed model. When it comes to the economics of SMEs, these enterprises tend not to have financial resources in order to invest into the elaborate HR technology, or formal training systems. Consequently, the use of cost-effective methods including government-subsidised initiatives (e.g., HRDF), university partnerships, and online resource systems play a significant role.

### 7. Critical Evaluation and Research Gaps

The literature on the relationship between resilience and strategic human resource management (SHRM) has added immense value to our knowledge about the ways an organisation may be able to ensure survival in a volatile environment, and prosper. The transformation of the perspective on resilience as a certain fixed feature of individual to a dynamic organisational capacity is one of the main strengths of current research. Research including that of Lengnick-Hall et al. (2011) and Luthans et al. (2006) has addressed how HR practices e.g. training, flexible work and leadership support foster resilience at the workforce level. In addition, the empirical research conducted in the recent global crises, especially in the COVID-19 crisis, showed that companies with resilient HR systems manifest greater engagement of the workforce, continuity of functioning, and flexibility (CIPD, 2021; McKinsey, 2021).

However, despite these valuable contributions, several methodological gaps persist. Majority of the current studies are cross-sectional and do not offer longitudinal analysis, hence the limited knowledge on how HR-based resilience evolves. Moreover, large corporations tend to attract the key attention of the studies of the resilience, and SMEs, particularly ones in the emerging markets, are underrepresented. This control is crucial because, unlike bigger companies, small- and medium-sized enterprises meet various limitations and possibilities, especially under the pressure of resource shortage and informal HR organisation.

Moreover, the evidence of existing studies is very few in Arab and Gulf Cooperation Council (GCC) states, where cultural, institutional and financial realities differ greatly to Western counterparts. As an example, Saudi Arabian

SMEs are functional in distinct socio-cultural contexts informed by labour localisation policies, Islamic ideals, and centralised leadership, all of which affect HR practices in a varied way. Another gap is the absence of common HR measures to measure resilience. Recent literature may typically depend on qualitative evaluations or broad performance indicators. Additional research is needed to develop standardised measures, that is, to establish particular indicators, like adaptability scores, ROI of resilience training, or the level of readiness to manage crises, in order to measure and compare resilience results in a different kind of organisations.

### 8. Conclusion

In this literature review, the combination of Resilience Engineering with Strategic Human Resource Management (SHRM) has been discussed with the conceptual basis of building an adaptive HR model with reference to the volatile conditions that prevail in Saudi Arabia SMEs. Based on theoretical and empirical literature, the review highlighted the fact that resilience is not solely a personal capacity, but also an organisational ability that can be developed by pursuing deliberate HR practices. The main concepts addressed were the alignment of HR to risk anticipation, the incorporation of resilience throughout the employee lifecycle, and the institutionalisation of adaptability within the organisational culture. Adding resilience to SHRM renders the practice of managing uncertainty and discontinuity a golden framework. The conventional HR models, which emphasise compliance and efficiency of operations, are insufficient in the context of the environments where change trends in technological, economic, and geopolitical spheres are rapid. Rather, resilience-based SHRM promotes agility and learning, and proactive change management, so that HR replace a support role to become a source of business continuity and innovation. The relevance of resilience-based HR model becomes especially strategic to Saudi SMEs. SMEs in the Kingdom face the challenges of Saudisation, shortage of skills, regulatory change, and economic volatility as the Kingdom moves on to drive its Vision 2030 agenda and experience socio-economic change. Resilience-integrated SHRM model will allow SMEs to be not only survive with those pressures, but to become agile and future-ready national development contributors. In the future, additional research on resilience measures, longitudinal effects of SHRM practices, and country-specific studies on Arab and

the GCC countries is evident. Capacity-building initiatives, training programs and incentives which encourage strategic HR adoption should become a priority among policymakers and SME support agencies. This requires practitioners to adopt an agile and anticipatory mindset with resilience built into an everyday organisational culture.

## References

Alazemi, R. (2022). Accounting for national business models' adaptation and restructuring evidence from Saudi Arabia (Doctoral dissertation, Brunel University London).

Albelali, S., & Williams, S. (2022). Workforce localization, women workers and gendered power relations in Saudi Arabian private sector workplaces. *Employee Relations: The International Journal*, 44(2), 431-445.

Alkhamis, N. (2017). THE POTENTIAL ROLE OF NON-OIL MANUFACTURING IN VISION 2030 AS THE ENGINE OF GROWTH AND THE ROLE OF SAUDI ARAMCO.

Almalki, A. (2023). SMEs and their Impact on Job Creations: Employment Perspectives from Saudi Arabia (Doctoral dissertation, The University of Manchester (United Kingdom)).

Almoaibed, H. A. (2020). Choosing a career in Saudi Arabia: the role of structure and agency in young people's perceptions of technical and vocational education (Doctoral dissertation, UCL (University College London)).

Alotaibi, S. F. (2019). Saudisation Rhetoric and Realities: Barriers to Effective Private sector participation in public policy regulatory framework.

Alsakran, A. (2014). Non oil exports finance and economic development in Saudi Arabia (Doctoral dissertation).

Arner, D. W., Barberis, J. N., Walker, J., Buckley, R. P., Dahdal, A. M., & Zetzsche, D. A. (2020). Digital finance & the COVID-19 crisis.

Bouaziz, F., & Smaoui Hachicha, Z. (2018). Strategic human resource management practices and

organizational resilience. *Journal of Management Development*, 37(7), 537-551.

Celestin, M., & Sujatha, S. (2024). Impact of Global Supply Chain Disruptions on Business Resilience: Strategies for Adapting to Pandemics and Geopolitical Conflicts. *International Journal of Advanced Trends in Engineering and Technology*, 9(2), 44-53.

Chartered Institute of Personnel and Development. (2023, May 25). CIPD flexible working – millions leaving due to lack of flexibility at work. *Personnel Today*.  
<https://www.personneltoday.com/hr/cipd-flexible-working-2023/>  
[www3.weforum.org+3committees.parliament.uk+3pure-oai.bham.ac.uk+3community.cipd.co.uk+6personneltoday.com+6softworks.com+6](http://www3.weforum.org+3committees.parliament.uk+3pure-oai.bham.ac.uk+3community.cipd.co.uk+6personneltoday.com+6softworks.com+6)

Ekinci, E., Mangla, S. K., Kazancoglu, Y., Sarma, P. R. S., Sezer, M. D., & Ozbiltekin-Pala, M. (2022). Resilience and complexity measurement for energy efficient global supply chains in disruptive events. *Technological Forecasting and Social Change*, 179, 121634.

Hamid, E. M., & Ahmed, D. E. (2024). Small and Medium Enterprises and Their Role in Achieving Sustainability The Case of Al-Ahsa Governorate, KSA. *AgBioForum*, 26(2), 66-76.

Hill, C. B., Yadav, O. P., & Khan, E. (2021). Systemic risk analyses for potential impacts of onshore unconventional oil and gas development on public health and the environment: A critical review. *Science of the Total Environment*, 786, 147512.

Hosen, M., Liew, C. Y., Lim, A. F., Hameed, I., & Rehman, H. M. (2024). A new mechanism for crisis management success. *Journal of Contingencies and Crisis Management*, 32(2), e12569.

Ijaz, M. M., & Tarar, A. H. (2020). Work Autonomy, Organizational Climate and Employee Engagement. *Pakistan Journal of Social and Clinical Psychology*, 18(1), 43-55.

Iyer, S. S., & Malhotra, S. (2024). Agile Leadership

and Strategic Resilience in the Era of Disruptive Innovation: Preparing Organizations for the Future of Work.

Janssen, M., & Van der Voort, H. (2020). Agile and adaptive governance in crisis response: Lessons from the COVID-19 pandemic. *International journal of information management*, 55, 102180.

Jian, W., Orlina-Ursula, D., & Regua, R. (2024). The role of strategic human resource management in achieving organizational agility. *International Journal of Science and Engineering Applications*, 13(8), 47-51.

Johnson, H., Roberts, O., & Wilson, G. (2024). Exploring the Economic Resilience of Small and Medium Enterprises (SMEs) During Financial Crises.

Johnstone, S. (2024). Human resource management in recession: Restructuring and alternatives to downsizing in times of crisis. *Human Resource Management Journal*, 34(1), 138-157.

Kiiru, G. W. (2015). Dynamic capabilities, strategic orientation and competitive advantage of small and medium-retail enterprises in Kenya (Doctoral dissertation).

Konlechner, S., Müller, B., & Güttel, W. H. (2018). A dynamic capabilities perspective on managing technological change: A review, framework and research agenda. *International Journal of Technology Management*, 76(3-4), 188-213.

Kwiecień, A. (2023). THE IMPORTANCE OF HUMAN CAPITAL FOR ORGANIZATIONAL RESILIENCE. *Scientific Papers of Silesian University of Technology. Organization & Management/Zeszyty Naukowe Politechniki Slaskiej. Seria Organizacji i Zarzadzanie*, (177).

Mayar, K., Carmichael, D. G., & Shen, X. (2022). Resilience and systems—a review. *Sustainability*, 14(14), 8327.

McKinsey & Company. (2022, October). Raising the resilience of your organization. [https://www.mckinsey.com/capabilities/people-and-](https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/raising-the-resilience-of-your-organization)

[organizational-performance/our-insights/raising-the-resilience-of-your-organization](https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/raising-the-resilience-of-your-organization)

McKinsey & Company. (n.d.). Developing a resilient, adaptable workforce for an uncertain future. Retrieved July 2025, from <https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/developing-a-resilient-adaptable-workforce-for-an-uncertain-future>

McKinsey Global Institute. (2021, February). The future of work after COVID 19. Retrieved [https://www.mckinsey.de/de/~ /media/mckinsey/locations/europe%20and%20middle%20east/deutschland/news/presse/2021/2021-02-18%20-%20mgi%20future%20of%20work%20after%20covid-19/mgi\\_the%20future%20of%20work%20after%20covid-19\\_report\\_feb%202021.pdf](https://www.mckinsey.de/de/~ /media/mckinsey/locations/europe%20and%20middle%20east/deutschland/news/presse/2021/2021-02-18%20-%20mgi%20future%20of%20work%20after%20covid-19/mgi_the%20future%20of%20work%20after%20covid-19_report_feb%202021.pdf)

Mokline, B., & Ben Abdallah, M. A. (2021). Individual Resilience in the Organization in the Face of Crisis: Study of the Concept in the Context of COVID-19. *Global Journal of Flexible Systems Management*, 22(3), 219-231.

Notoma, O. K. (2025). A Holistic Approach to Cybersecurity Risk Management and Compliance in the Cloud: Recommendations for Development of a User-Friendly Framework for Small Businesses (Doctoral dissertation, Purdue University).

Nurunnabi, M. (2020). Recovery planning and resilience of SMEs during the COVID-19: experience from Saudi Arabia. *Journal of Accounting & Organizational Change*, 16(4), 643-653.

Obaid, S., Ahmad, S. F., & Mumtaz, F. (2022). Ability-motivation-opportunity framework: An analysis of interrelated effects of HRM practice and leadership style on organizational outcomes. *International Journal of Asian Business and Information Management (IJABIM)*, 13(1), 1-26.

Oladapo, I. A., Alkethery, N. M., & AlSaqr, N. S. (2023). Consequences of COVID-19 shocks and government initiatives on business performance of micro, small and medium enterprises in Saudi Arabia. *Journal of*

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Small Business Strategy, 33(2), 64-88.

Rantanen, I. (2021). Sustainable supply management as a source of competitive advantage in Finnish SMEs: A resource-based view.

Roeder, A. (2021). Communicating for resilience: a longitudinal study of processes and principles for managing organizational disruption.

Saad, S. K., & Elshaer, I. A. (2020). Justice and trust's role in employees' resilience and business' continuity: Evidence from Egypt. *Tourism Management Perspectives*, 35, 100712.

Störmer, M., & Hiebl, M. R. (2024). How Management Control Systems Can Help Small and Medium-Sized Enterprises Develop Resilience. In *Small and Medium-Sized Enterprise (SME) Resilience* (pp. 33-62). Springer, Cham.

Tordeux, A., Julitz, T. M., Müller, I., Zhang, Z., Pietruschka, J., Fricke, N., ... & Löwer, M. (2024). System Reliability Engineering in the Age of Industry 4.0: Challenges and Innovations. arXiv preprint arXiv:2411.08913.

World Economic Forum. (2022). Risk Proof: A framework for building organizational resilience in an uncertain future.

[https://www3.weforum.org/docs/WEF\\_A\\_Framework\\_for\\_Building\\_Organizational\\_Resilience\\_in\\_an\\_Uncertain\\_Future\\_2022.pdf](https://www3.weforum.org/docs/WEF_A_Framework_for_Building_Organizational_Resilience_in_an_Uncertain_Future_2022.pdf)  
[www3.weforum.org](https://www3.weforum.org)