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# INNOVATION CHALLENGES AND STRATEGIC RESPONSES OF SMES IN THE UAE MOBILE PHONE INDUSTRY

**Ebrahim Mollik**[1],
**Faisal Majeed**[2i]
[1]Postgraduate Student,
MSc International Business with Data Analytics,
Ulster University, London Campus,
United Kingdom
[2]Professor Dr.,
Faculty Member & Supervisor,
Ulster University, London Campus,
United Kingdom

**Abstract:**
The research paper analyses the uncertainty concerning innovation challenges and responses to these challenges as they relate to the small and medium-sized enterprises (SMEs) that are currently functioning under the mobile phone resale and recycling niche in the UAE. It is a qualitative, case-based study and is an interpretivist philosophy derived. As such, semi-structured interviews were conducted with 30 SME owners, managers, and industry experts. The major outcome is that SMEs encounter some serious barriers to innovation, such as the regulatory complexity involved, lack of access to funds, digital capability gap, and the continuous scepticism about refurbished products by consumers. In response, SMEs develop adaptive strategies as outsourcing for refurbishments, engaging in green branding and certifications, and aligning with national policy initiatives. This study extends and reinforces an earlier conceptual framework on SME innovation in showing the reality of constraints and practice into which innovation is moulded. Practical recommendations are made both to SMEs and policymakers to create a more enabling ecosystem for innovation in emerging markets.

**JEL:** L26, O32, M21, Q56

**Keywords:** SME innovation, innovation barriers, strategic responses, mobile phone resale, UAE emerging markets

[i] Correspondence: email mollikebrahim80@gmail.com, faisal.majeed@qa.com

 

## 1. Introduction

Innovation is at the core of high performance and competitiveness for SMEs in rapidly changing and technology-intensive industries like mobile phone reselling and recycling. In the UAE, where SMEs are touted to bring about economic diversification, sustainable development strategies add a facet with regard to innovation, not being an option but increasingly a necessity. But still, in emerging economies, innovation adoption in SMEs has not been very encouraging or easy, mainly due to barriers such as scarce financial access, complex regulations, poor digital infrastructure, and fragmented supply chains (De Reuver, Nikou, & Bouwman, 2016).

Such duality finds its best illustration in mobile telephony. The industry is brimming with opportunities for innovation in refurbishing, digital resale platforms, and process upgrades. In fact, when an SME in this business is fully open to the ideas and opportunities available in the market, it becomes a great deal for them. Some of the opportunities out there are: despite the environmental and economic impact of mobile phone recycling, consumer doubt and ignorance continue to hamper extensive application. A study in consumer disposal behaviour testifies that only about 3% of users use recycled mobiles, while many retain or pass them on informally (Own the Edge, 2008).

This paper supplements the conceptual framework developed in a related study, which examined how innovation contributes to the performance of SMEs in the mobile phone sector of the UAE. That study put emphasis on the strategic role of innovation as an engine of growth and efficiency, while these essays look into the barriers that deter innovation adoption and the strategic responses SMEs use to overcome the constraints. Here, qualitative interpretation will be the lens (Creswell, 2014) through which thematic findings will be subjected to analysis from interviews with SME entrepreneurs, industry experts, and mobile phone professionals.

By examining such issues, this study responds to operational pressures combined with external limitations faced by SMEs in emerging economies, and it will certainly improve knowledge on SME innovation at the same time, highlighting the nexus between structural barriers, trade-sector specificities and strategic adaptation at the circular economy.

## 2. Research Methodology and Fieldwork Design

### 2.1 Research Philosophy and Rationale

This research study adopts a philosophy of interpretive research wherein reality is regarded as socially constructed and can be better understood through individual subjectivity. This study applies interpretivism as a perspective that allows the examination of complicated, context-specific issues, particularly the innovative barrier- and strategic response capabilities among SMEs within the mobile phone sector—issues,

which quantitative-generalization approaches cannot fully capture concerning dynamic organizational behaviour (Khaldi, 2017).

Interpretivism studies the meanings of actions rather than seeking tangible truths that can be measured, as would be found within the positivist paradigm. Indeed, it speaks to the basis on which this research seeks to demonstrate how entrepreneur-managers in SMEs in the UAE infer innovation pressures, regulatory restrictions, and changing market expectations. This would factor personal narratives and industry-specific insight into a more refined understanding of both the limitations and strategies unique to grassroots innovation.

Moreover, the interpretivism paradigm provides justification for the application of qualitative methods, especially semi-structured interviews, which enables an exploration of the participant's views in a rich, in-depth manner, leaving room for flexibility regarding other emerging themes. That philosophical direction gives grounds for the methodological approach to be responsive, inclusive, and rooted in lived experience, essential qualities in research on socially situated realities like informal innovation practices, outsourcing decision-making, and consumer trust in refurbished technologies.

Thus, it was possible to interpret this research from an interpretative angle and respond to issues beyond superficial analysis, penetrating into those deeper ones entailed by the context from which these SMEs draw their innovation in a rapidly evolving and resource-constrained industry landscape.

### 2.2 Case-Based Inquiry in the Mobile Phone Sector

Having recognized that innovation adoption in SMEs is a tense word in the context of complexity and specificities, this study chooses a case method on how firms in the UAE mobile phone resale and recycling sector experience and respond to innovation-related challenges. Case study methods fit well contemporary phenomena that occur in the real world where boundaries between phenomenon and context appear indistinct (Yin, 2009). It gives room for the researcher to examine in detail the operations of SMEs in a given industry that is both technology-savvy and environment-sensitive. The mobile phone sector in the UAE is potentially an interesting area for such analysis as it combines digital innovative practices with circular economy practices in the context of increasing regulatory accountability. Small and medium enterprises in this space are, as a consequence, positioned between global innovative hubs and the local market, thus representing a unique opportunity to reveal both systemic restraints and adaptive strategies.

Unlike broad generalization, a case-based inquiry is able to support theoretical generalization-from-theoretical practice, policy, and further research into real-life challenges captured by finance limitations, supply chain fragmentation, and scepticism that proves tough to quantify but vital for understanding how innovation is experienced and managed at the firm level.

Through assessing a number of SMEs cross-cutting across the specific sector and geographic context, the case study approach deepens the analysis and thus strengthens the legitimacy of the emergent themes. Thus, they reflect the realities of innovation practice shaped by environmental pressures, institutional frameworks, and strategic decision-making in emerging markets like UAE.

### 2.3 Qualitative Approach for Understanding Innovation Barriers

The study employs a qualitative exploratory approach to delve into the kinds of barriers to innovation and the strategic responses elicited on the part of the SMEs in the UAE mobile phone resale and recycling sector. Qualitative design is, thus, appropriate for research into the different types of barriers faced by SMEs that are complex, multidimensional, and often subjective. Unlike quantitative methods that rely on numerical generalizations, qualitative research aims at gaining an understanding of the individual experiences, organizational environments, and changing industry practices (Patton, 2002; Creswell, 2014).

The exploratory nature arises from relative lacunae in structured knowledge concerning the circumstances in which UAE-based SMEs deal with barriers to innovation. Its focus is on generating insight rather than testing existing models. In fact, this consideration works well with the emerging but under-researched context of sustainability-driven innovation for the mobile phone sector, where firms usually work informally or adapt mostly reactively to changing market and regulatory environments (Alida, 2016).

Semi-structured interviews gifted the qualitative method with another layer for the collection of various people perspectives on outsourcing, regulatory pressure, financing gaps, and consumer perception. The approach also grants sufficient flexibility to probe whatever specific area of interest appears during the course of the conversation, while steering conversation in a manner that will keep it aligned with the core themes of our research (Kvale & Brinkmann, 2009).

Rich narrative data collected using this methodology will paint a more nuanced picture of the innovation environment for SMEs and will also provide insights that may remain elusive in a more rigorously quantitative framework. It will also complement the case study approach as the basis for comparisons of behavioural, strategic, and perceptual patterns across cases.

### 2.4 Participant Sampling and Interview Design

This study purposively sampled participants for insights that would deepen and relate directly to SME innovation experience in the UAE's mobile phone resale and recycling. The intention behind this was to gather the voices of interventionists, facilitators, and advisors in decision-making and innovation processes in the sector.

In total, about thirty individuals were interviewed, which included:

- 15 direct SME founders and CEOs working within mobile phone resale and refurbishment.

- 10 top managers of innovation, operations, or compliance; and
- 5 industry experts or consultants owning regional acumen on sustainability, digital transformation, and SME development.

Such a diverse respondent pool enabled a broad yet focused understanding of how SMEs interpret and respond to innovation challenges posed by external factors such as policy changes, consumer perceptions, and technology adoption hurdles.

Semi-structured interviews were employed, since they present a balance between standardizing the information across interviews and ensuring flexibility in investigating participant-specific perspectives. A guide was predetermined with regard to the questions focusing on themes such as drivers of innovation and barriers to finance and operation, outsourcing strategies, government compliance, and customer engagement. They were done face to face where possible and virtually, depending on one's availability and preference, with all interviews taking about 30 to 60 minutes each.

All interviews were conducted in English and recorded with the consent of the interviewees and subsequently transcribed for analysis. The process of data collection is characterized by confidentiality and transparency along with ethical integrity that would create the right environment for open and honest conversation-this is essential in capturing the nuanced realities of innovation in practice.

**2.5 Fieldwork Process and Data Collection**

Fieldwork involved collecting in-depth, qualitative data from SME operators and industry professionals engaged in the mobile phone resale and recycling business in the UAE. The primary method of data collection was face-to-face semi-structured interviews that were summative, asking the key questions and at the same time leaving openness for prompting and emergence using real-time responses.

The interviewing lasted for around eight consecutive weeks and was done through personal interviews, online video calling, and mobile phone conversations, as preferred and available. Each face-to-face or video and telephonic interview lasted between 30 and 60 minutes. All sessions were held in English. Before interviews were conducted, brief explanations were given to participants about the study and assurances made that participation was voluntary and responses would be anonymous.

A structured interview guide was developed with themes including innovation drivers, barriers (for example, regulations, financing, digital infrastructure), strategic responses (for example outsourcing, branding), and future expectations. This structure facilitated the researcher in aligning to the objectives of the study while giving the participant room to elaborate concerning what they saw as most relevant.

The interviews were audio-recorded with prior consent collected, and made detailed field notes were made for aspects that could not be captured by audio responses. The audio files were subsequently transcribed and anonymized for analysis. In addition to the data triangulation and fortification of validity of goodness of themes emerging, other sources were used: company documents accessed, websites, and government policy briefings on related issues (Yin, 2009).

The study comprehensively and flexibly captured the reality and strategy-making of the SMEs in an environment that seems quite challenging in terms of innovation.

### 2.6 Ethical Considerations and Researcher Positioning

Ethical integrity was maintained throughout each stage of the research, in keeping with internationally recognised standards for qualitative research. The study applied standards of transparency, respect, and autonomy to research participants at every stage-from recruitment to data analysis. Ethical approval was anchored on the core principles of informed consent, confidentiality, and voluntary participation.

Informed consent was collected before each interview, as considered by Kvale and Brinkmann (2009), a hallmark of ethical qualitative inquiry, emphasising the autonomy of the participant. All participants were given information about the aims of the study, the procedures for interviews, and their rights as a study participant, including the right to withdraw at any time without penalty.

All data were anonymised by removing identifiable information to maintain confidentiality. All recording of interviews, transcripts, and field notes was secured and accessible to the researcher only. The measures were instituted to reduce risks and create a safe environment for participants to share honest experience-derived information.

The study thus adopted relational and situational ethics since ethical research goes beyond procedures and engages in respectful and empathetic contact (Tracy, 2010). The researcher made attempts to establish rapport with participants using different interview techniques appropriate to every context to create that space for open trust developed conversations.

Moreover, reflexivity on the part of researchers was held all through the research. Recognising how personal assumptions and one's background could influence the researcher, researcher reflexivity was maintained throughout the course of data gathering and interpretation to guard against any biases in findings (Creswell, 2014). Such a reflective stance enhanced the credibility and authenticity of findings with regard to the accurate representation of participant perspectives.

## 3. Innovation Challenges in UAE Mobile Phone SMEs

### 3.1 Regulatory and Financial Barriers

SMEs involved in mobile phone resale and recycling in the UAE undergo suffocating restrictions from various regulatory frameworks and financial constraints that are very detrimental to the adoption of innovation. Despite the commitment of the government towards sustainability and digital transformation, SMEs go through lots of hardships in learning licensing procedures, compliance with e-waste regulations, and fragmented enforcement mechanisms. Inconsistencies such as these leave room for confusion and a lack of clarity as to how innovation might be incorporated in meeting local and international standards (Creswell, 2014).

In addition to that, limited access to finances is a critical barrier. Many SMEs struggle to secure the funding necessary for technological upgrades, research and development, or hiring skilled personnel. There are some government funding initiatives, but awareness and accessibility are low among smaller firms. As a result, most SMEs rely heavily on internal cash flow, which is usually focused on short-term survival rather than long-term innovation investment. Therefore, their capability in advanced refurbishment techniques, automation investment, or development of digital platforms for improving operational efficiency and customer engagement remains limited (De Reuver et al., 2016).

Above all, the participants in the interviews mentioned that further unpredictability of import/export regulations regarding used electronics and spare parts would make things extra complicated. SMEs would have to go through delays and fluctuating costs, which would directly affect the way innovation would be planned and allocated for resources. Many firms would end up adopting incremental rather than radical innovation strategies, prompting their transformation to be delayed before performance improvement and sustainability.

These challenges underline a requirement for a more supportive regulatory environment, as well as specifically targeted financial mechanisms, which can empower SMEs to innovate with confidence and at scale in the market within the UAE.

### 3.2 Public Trust and Market Acceptance

One of the most lingering non-technical challenges generated by innovative mobile phone resale and recycling SMEs in the UAE is low levels of public trust in refurbished products. Though refurbished phones carry both economic and environmental advantages, consumers generally paint them in the image of poor quality, short lifespan, or unreliability. This perception paradigm considerably inhibits market demand, along with the ability of SMEs to scale innovation-oriented offerings.

An international survey conducted in 2008 regarding mobile phone disposal behaviour reported that only 3% of users recycled their phones, while the rest kept, discarded, or informally passed them on (Own the Edge, 2008). This statistic tells of an awareness gap in recycling channels, but underneath lies a much deeper issue, considering consumer detachment from circular economy values, especially in developing and transition markets.

In this study, several SME respondents explained that even after adhering to high-quality refurbishment processes and certification schemes, clients hesitated to buy non-new devices for fear of hidden defects or the absence of warranty. Such an image problem compels SMEs to further engage in trust-building measures, e.g., return policies, extended warranties, or cooperation with well-known third-party certifiers.

Moreover, public distrust extends beyond the products to the credibility of the companies concerned. The innovative small and medium-sized enterprises that really work hard to create new products and give superior quality resist competition from imposters and unregulated bodies; the same weakness, however, makes it difficult to

promote innovation unless marketing investment and brand reputation can act as leverage- which smaller firms cannot always afford to do.

Consumer trust on the other hand causes limitations at a market level, acting as a barrier to innovation and dissuading investments on improving processes and product development. Awareness campaigns and a transparent operation will require certification and green labelling efforts to enhance acceptance and unleash innovation potential in this sector.

### 3.3 Digital Capability and Internal Limits

Internal constraints, especially in digital infrastructure, human capital, and the capacity for innovation, are often some formidable obstacles SMEs have to overcome in addition to local and international legal and market hurdles. Digital transformation is identified as one of the significant means of improving efficiency and competitiveness. Most SMEs, however, do not have the basic technologies and skills necessary for supporting such a transformation.

Most interviewees have stated that basic digital tools such as inventory tracking systems, automated diagnostics, and customer engagement applications are outdated or non-existent in their operations. Due to the lack of affordability, technical complexity, and lack of technical expertise, adopting advanced technologies like AI-driven quality control or traceability through blockchain for devices is very much limited in these undertaking firms. This, therefore, limits not only innovation but also basic operation improvement.

Human resources constraints are also critical. Most SMEs maintain very lean teams where employees wear multiple hats. Since there are no specific innovation managers or IT personnel, these strategic digital initiatives are often postponed, outsourced, or implemented in fragmented ways. Several SMEs reported relying on informal networks and improvised Strategies in place of structured innovations plans, often due to limited resources and absence of dedicated innovation teams (OECD, 2017; World bank,2019).

Such internal limitations are further compounded with a lack of institutional support for digital capability building peer tailored to SMEs. The government of the UAE, as mentioned before, has been trying to digitize the country through various national strategies. However, most small firms could not leverage and harness such intervention schemes due to the ignorance of or complex application processes.

With such capabilities, the SMEs instead go for easy external sources of innovations that include collaborating with refurbishment hubs abroad or buying ready-made platforms that would address their operational needs in a shorter time frame, but do little to build internal capacity for future use. These small-scale enterprises are doomed to non-competitive behaviour in the fast pace of competition and change-moving industry unless they capitalize on deliberate interventions to develop digital readiness skills and know-how in areas of innovation orientation.

## 4. Strategic Responses of SMEs to Innovation Pressures:

### 4.1 Outsourcing toward Global Refurbishment Hubs

One of the most salient strategic responses adopted by SMEs in the UAE mobile phone sector is outsourcing innovation-related processes particularly refurbishment and technical diagnostics-to globally reputed hubs such as Shenzhen, Hong Kong, and Dubai. The motivation behind this outsourcing is purely to cut costs and mitigate some of the shortages in local skill and to avail specialized technological capabilities not easily found in-house.

The reports of the interviews reveal that many SMEs prefer sending used mobile phones to external partners for repairs at the hardware level, quality testing, and sometimes even repackaging. The East Asian hubs are characterized by their economies of scale, short turnaround time, and sophisticated technical infrastructure, thus allowing UAE SMEs to gain innovation without incurring hefty internal costs (De Reuver et al., 2016). To many of the small firms with limited access to finance and skilled labour, this might qualify as a model that keeps them competitive as much with regards to product quality as to pricing.

Outsourcing provides short-term relief for internal capability constraints, but it brings along long-term dependency and a lack of local growth in innovation. The product customization, quality, and branding have been taken off, not often leaving the firm with a marketplace differentiator for offerings (Creswell, 2014). Moreover, SMEs may have to face logistical delays, currency fluctuations, and trade policy risks due to their reliance on international refurbishment centres.

Several of the participants expressed the same view: outsourcing has become the default option because there really is no local support ecosystem for refurbishment innovation. There are no easily accessible technical training, incubators backed by government, or cheap R&D solution options available to SMEs, and so they are left with limited options (Yin, 2009).

Overall, outsourcing remains a practical but imperfect form of innovation; it will allow SMEs to survive in tight situations but will necessitate far greater investments in the innovation capabilities that will allow the country to achieve sustainability and autonomy in the long run (Creswell, 2014).

### 4.2 Adoption of Green Branding and Certification

In response to consumer worries about environmental issues and product reliability, green branding and certification systems have been adopted by SMEs in the UAE mobile phone industry as covenantal mechanisms for developing trust, differentiating products, and enhancing the credibility of innovation. The trend is strongly aligned with the growing concern of national and international stakeholders regarding sustainable consumption and thereby supports the SME attempts at penetrating markets that are traditionally believed to be inhabited by larger brand-led firms.

Several owners of SMEs in the interview indicated that, irrespective of resource restraints, these enterprises sought third-party certifications for product quality, environmental compliance, and/or recycling. These certifications include ISO environmental management labels, electronic waste handling seals, or "green refurbished" marks, which set them apart as ethical and quality-conscious providers, especially where public scepticism of refurbished devices is high (Own the Edge, 2008).

Gemma Dunn elaborated on green branding that goes beyond labelling, involving transparent marketing focused on educating consumers about the benefits of refurbished phones and resource efficiency. Some innovators have cited that environmental benefit messaging (less landfill waste, longer life cycles) is beginning to inform consumer perceptions, especially among the younger, environmentally friendly purchasers. By incorporating sustainability messaging into their value proposition, these SMEs counter consumer pressure while embedding themselves into the UAE sustainability goals according to Vision 2031.

It still gets in the way. Certification procedures are, in general, limiting factors in terms of time and cost; that is where SMEs lack internal know-how or such assistance to effectively pursue any of these programs. In addition to that, the fact that there is no central national certification for SME refurbishment limits scaling and hence uniformity across the sector.

However, despite these challenges, green branding is increasingly being accepted as an instrumental strategic innovation tool, where nurturing environmental conscientiousness is enlightened by competitive advantage, with this tool opening doors for SMEs into trust-laden markets and acting as the driving force of product and process innovation.

### 4.3 Policy Engagement and Compliance Strategies

In the evolving national sustainability agenda, some SMEs-within the UAE mobile phone resale and recycling industry-have adopted policy engagement and compliance strategies as a means of navigating regulatory and environmental pressures (Creswell, 2014). Policy engagement and compliance have enabled the SMEs position-favourable to align with government-led sustainable initiatives, participate in the various regulatory programs, and internally revise corporate processes to meet the compliance standards-in most cases being strategic route visibility, credibility, and access to potential fund sources (Yin, 2009).

For instance, interviewees showed that engagements were rising towards programs under UAE Vision 2031 that advocated in favour of circularity, digital transformation, and responsible e-waste management. Some of the SMEs would even have partaken in the respective local authorities and participated in formal e-waste collection schemes to bolster their formal roles in the recycling ecosystem, as well as be proactive in demonstrating sustainability concerns to create stakeholder trust and attract institutional partnerships.

The case given by some SMEs is that the compliance with environmental regulations such as proper disposal and material handing guidelines has passed over from being a legal obligation to a bordering an edge-the competitive differentiator. Adherence to best practices in waste-sorting, device tracking, and data protection will thus highly speak trust to the B2B case or corporate clients and government tenders (Yin, 2009).

There are, however, many issues that have still not been sorted. Some SMEs shared their agony about inconsistency in enforcement, little regulatory guidance from the regulators, and the red tape they encounter in trying to formalize their practice. Given that there are no separate compliance officers or legal teams for small businesses, understanding changes takes longer, and the processes for applying for government aid programs become more convoluted. This has led several SMEs to adopt informal modes of complying through associations and peer networks of the industry to interpret and roll out compliance (Creswell, 2014).

Despite the problems, SMEs increasingly see policy engagement as a strategic move-not only to achieve legitimacy of operation but also to influence future legislation that will support innovation and growth in the sector.

## 5. Discussion: Innovation Practice in a Constrained Ecosystem

### 5.1 Insights Aligned with Conceptual Framework (Paper 1)

The findings of this analysis validate in an applied context and extend the concept developed in the companion article titled "A Conceptual Framework on Innovation and SME Performance in the UAE Mobile Phone Industry." While the first paper proposed that "*innovative activities improve the performance of SMEs through improvement in efficiency, competitiveness, and adaptability*," in this study, practical limitations and adaptation faced by SMEs are considered to realize the benefits (Creswell, 2014).

The opinions expressed in the framework evidently relate to the three key variables: innovation inputs, internal capabilities, and external enablers. For instance, while evidence shows that outsourcing and digital elements are innovation inputs, the results in this paper indicate that sometimes the presence of internal constraints, such as inadequacy of technical staff or digital infrastructure, will impede their full embrace. Also, while the original framework elaborated the positive role of enabling policy and ecosystem support, this study indicates that SME operations can be obliterated by the contrary—fragmentation of regulations and limited access to funding (Donga, H., 2017). Furthermore, this paper supports the framework's central proposition that SMEs tend to rely more on adaptive, incremental innovation as compared to radical or internal R&D-led innovation. The approaches described in this paper, including outsourcing, green branding, and selective engagement with policymakers, are thus all quite attractive lineages from the point of view of this framework (Yin, 2009).

Lastly, the barriers highlighted in this research give away road loops through the framework. For instance, limited consumer trust (an external restriction) reduces the

attractiveness to invest in innovation (an internal capability) and subsequently depreciates SME performance enhancement opportunities. In light of these interactions, this dynamic application of the framework is contextualized according to the SME ecosystem of interest (De Reuver et al., 2016; Yin, 2009).

In conclusion, this study thus relates and further enriches the theoretical foundation established in Paper 1 by linking it to the realities of SMEs operating in the mobile phone industry in the UAE and the strategies they use to adapt.

### 5.2 Role of the Innovation Ecosystem and Government Support

The innovation capability of UAE SMEs in the mobile phone sector is heavily dependent on the strength in the surrounding innovation ecosystem, which brings everyone in. Individual strategies like outsourcing, certification or compliance may be well understood but often require broader structural factors - namely, institutional support, access to funding, digital infrastructure and an accompanying policy framework (Creswell, J.W., 2014).

Interviews showed that many very small firms were not leveraging national strategies-in the UAE-for promoting innovation, sustainability and SME development, like UAE Vision 2031 and on digital economy-going by 2014. Many of them said limited awareness, bureaucratic hurdles, and pathways not seen exclusively for SMEs stopped smaller businesses from fully engaging with innovation-enabling accesses (Donga, H., 2017).

There are no sector-oriented innovation clusters or incubators for e-waste management or the refurbishment of mobile devices. Thus, innovation is constrained because SMEs normally operate alone, without collaboration through which they share knowledge, co-develop a solution or access new technology training. This ecosystem gap resulted in a fragmented landscape of innovation, where only a few firms can scale up their innovative efforts.

In addition, the absence of government-backed certification schemes or innovation scoring models made it impossible for SMEs to measure their progress in terms of green finance access and market credibility. This is particularly crucial in a trust-sensitive industry like refurbished electronics, where such endorsements could sway opinions dramatically among consumers and investors (Own the Edge, 2008).

In the end, even if the national policy environment shows a progressive vision, the operationalization of support at the grassroots level within the SME level is very different. It will require more targeted policies and simplified access to innovation funding, as well as strengthened public-private partnerships, enabling the SMEs to be integrated better into the innovation ecosystem of the nation.

### 5.3 Practical Lessons for Innovators in SMEs within Emerging Economies

The case studies of SMEs in the United Arab Emirates that have specialized in the mobile phone resale and recycling areas did offer very helpful lessons to any small business working under similar conditions in any emerging market. Despite inherent challenges

that come in regulatory, financial, or operational forms, SMEs were able to show that contextual innovation strategies such as outsourcing, green branding, and selective policy alignment would also work as alternatives to resource-intensive innovation models (De Reuver et al., 2016).

One such lesson is flexibility and strategic pragmatism. Rather than investing heavily in internal R&D, many SMEs choose to leverage existing external infrastructures, such as global refurbishment hubs, while focusing internally on improving service quality, branding, and compliance. This allows firms to remain competitive without overstressing their limited resources - an appropriate strategy for almost all sectors of SMEs in emerging economies.

Secondly, the aspect of building consumer trust comes into play. In instances where markets still fear or are sceptical about anything non-new or circular, SMEs have to take extra miles from product improvement to cover visibility, transparency, and after-sales support. Certification, environmental messaging, and digital engagement tools are becoming more relevant to change the traditional perception and improve customer loyalty over time (Own the Edge, 2008).

The third attribute of successful SMEs is a good understanding of their regulatory environment and a thorough pursuit of alignment with national policies and programs. Shortcomings will still occur in the policy implementation processes; however, proactive engagement opens channels to firms for accessing the already-available supportive mechanisms, influencing the development of the regulations, and establishing legitimacy within the competitive ecosystem.

Finally, this study has shown the need for entrepreneurial resilience: adaptability within the very short notice, strategic partnership formations, and incremental innovations in response to the constraint conditions. For policymakers and ecosystem builders, such an argument points out that SME innovations in emerging markets cannot be entirely attributed to funding; there should, instead, be specific infrastructure, simplified certification processes, platforms that adhere to knowledge sharing, and policy consistency for long-term periods (Creswell, 2014).

These practical lessons show how much innovation in an emerging economy is not really about a technology disruption but adaptive thinking, resource leveraging, and ecosystem alignment (De Reuver et al., 2016; Yin, 2009).

## 6. Conclusion and Recommendations

### 6.1 Summary of Key Findings

Small and medium enterprises in the United Arab Emirates' mobile phone resale and recycling sectors find themselves involved with innovation challenges and strategic responses, which have proven to be complex, demonstrating how small firms navigate the waters of innovation in resource-scarce, regulation-heavy environments. It is important to note that these findings confirm that while innovation within the premise of growth and sustainability for business is acknowledged, multiple barriers—which

include regulatory complexity, limited finance, gap in digital capabilities, and mistrust in consumers—significantly hinder innovation at a small to medium enterprise level.

On technology-advent SMEs will employ a variety of strategies to adapt, such as outsourcing their refurbishment processes to one of the international hubs, developing green branding and third-party certification to gain consumers' belief in the product, or selectively engaging in those government sustainability policies to comply and obtain institutional support' reflection of the pragmatic model of innovation,' which prefers survival, flexibility, and incremental progress to radical transformation.

Therefore, the study further enhances the conceptual scheme presented in the first paper by tying actual practices to key theoretical components: inputs to innovation, enabling conditions, and performance outcomes. Crucially, all of this evidence-and particularly, that about feedback loops such as those demonstrating how external constraints influence internal innovation capacity-is vital for understanding SME behaviour in emerging markets.

The research points on the strategic brilliance that SMEs do regarding balancing innovation ambition with operational restrictions and advances the comprehension of how innovation happens at the ground level in well-potential but poorly supported industries.

### 6.2 Strategic Recommendations for SMEs and Policymakers

According to study results, the following few strategic recommendations would help strengthen innovation capacity and sustainability outcomes among SMEs within the UAE mobile phone resale and recycling sector:

#### 6.2.1 For SMEs

- **Build in Trust:** Transparency branding strategies with third-party certification, return policies, and other means of communicating environmental benefits should be adopted by SMEs so that consumer scepticism is overcome regarding refurbished products.
- **Network Abroad for Innovation:** Outsourcing shall remain cost-effective for SMEs, but should not be seen as an end but instead as a means through collaboration, upskilling, and reinvestment of profit margins in building in-house capacities.
- **Engage Proactively with Policy Programs:** The companies should therefore capitalize on the national sustainability initiatives (for instance, as underscored in the UAE Vision 2031) and join such pilot programs, forums, or public-private partnerships that support innovation.

#### 6.2.2 For Policymakers

- **Creation of Innovation Support Schemes Emphasizing SMEs:** Construction of the funding, incubation, or application process that is made with the eye to

achieving implementation will ensure that all support is accessible for the smaller firm and relevant under the resource constraints.

- **Create Sector Specific Certification Frameworks:** Implementing government-supported sustainability and quality standards to refurbished electronics would legitimise the industry and instil confidence in the consumer.
- **Encourage Ecosystem Collaboration:** This is going to help establish knowledge-sharing platforms, co-working hubs, and training programs that tie in SMEs with academic institutions, R&D labs, and technology providers.

Above all, the recommendations are intended to improve the environment under which internal and external constraints have been addressed, that is, creating a much more enabling environment for SMEs to innovate and contribute to sustainability objectives and survive in the rapid change brought by the evolving circular economy.

**Conflict of Interest Statement**

The authors declare that there is no conflict of interest regarding the publication of this article. The research was conducted independently, without any financial, personal, or professional affiliations that could influence the findings or interpretations. No external funding was received for this study.

**About the Author(s)**

**Ebrahim Mollik** is a postgraduate researcher in International Business with Data Analytics at Ulster University, London Campus, UK. His academic work focuses on innovation in SMEs, digital transformation, Islamic finance, and sustainable development in emerging markets. He has published peer-reviewed articles in the *European Journal of Economic and Financial Research* and *Journal of Small Business and Enterprise Development (Emerald Publishing)*. His recent research explores cybersecurity in Islamic digital banking, innovation strategies in the UAE mobile phone sector, and the integration of social impact models such as Dr. Muhammad Yunus' Three Zeroes Theory into Islamic FinTech and financial inclusion frameworks.

**Dr. Faisal Majeed** is an experienced Business Management Lecturer and Dissertation Supervisor with over 10 years of expertise in teaching, research, and management, both locally and internationally. He holds a Ph.D. in Business Management from the University of Bolton and an M.Sc. in International Business and Management from the University of Bedfordshire. With a background in Marketing (MBA) and proficiency in English, Dr. Majeed possesses excellent communication, leadership, and organizational skills. He is dedicated to fostering academic excellence and supporting students in their careers, combining innovative teaching methods with practical industry insights.

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