



Contents lists available at ScienceDirect

Technological Forecasting & Social Change

journal homepage: www.elsevier.com/locate/techfore

“To boldly go where no [man] has gone before” - Institutional voids and the development of women's digital entrepreneurship¹

Maura McAdam^a, Caren Crowley^{b,*}, Richard T. Harrison^c^a DCU Business School, Dublin City University, Glasnevin, Dublin 9, Ireland^b Maastricht School of Management, Endepoldomein 150, Maastricht 6229 EP, The Netherlands^c University of Edinburgh Business School, 29 Buccleuch Place, Edinburgh EH89JS, UK

ARTICLE INFO

Keywords:

Saudi Arabia
 Institutional voids
 Digital entrepreneurship
 Female entrepreneurs
 Biographical narrations

ABSTRACT

This paper examines the emergence of digital entrepreneurship in the context of emerging economies. Given that these economies generally lack a well-developed institutional framework, we draw on the concept of institutional voids as our theoretical lens. We argue that digital entrepreneurship facilitates the navigation and bridging of socio-cultural institutional voids but also provides opportunities for entrepreneurs to directly and indirectly alter the existing institutional context. We illustrate these arguments by drawing upon six biographical narrations of female digital entrepreneurs in Saudi Arabia. Accordingly, through our development of a multi-level model, we make explicit the two-way causal interaction between entrepreneurial action, institution altering behaviour and the social and cultural context, thus providing a framework for future research.

1. Introduction

Institutional voids emerge when there is a complete lack of, or underdeveloped, institutional framework to support entrepreneurship (Elert and Henrekson, 2017). The presence of institutional voids is apparent in limited policies, infrastructural supports or an unsupportive culture, which act to constrain entrepreneurial processes and outcomes (Bruton et al., 2010; Spigel and Harrison, 2018). Such institutional voids are common in emerging economies characterised by newly established commercial practices and social norms (Manolova et al., 2006).

Prior studies have highlighted the need for supportive policies and infrastructure to promote and enable entrepreneurship (Giacomin et al., 2011). However, the impact of social and cultural practices on entrepreneurship remains underexplored. Culture is defined as patterns of

thinking, feeling and acting which are learned and shared by others (Hofstede, 2001). It impacts entrepreneurship by defining who is deemed socially ‘legitimate’ as an entrepreneur and thus facilitates the development of pro-entrepreneurial values and patterns of thinking (Krueger et al., 2013). For instance, Marlow and McAdam (2015) argue that in societies where social norms associate entrepreneurial activity with masculinity, female entrepreneurs lack legitimacy which may subsequently reduce their access to resources. Krueger et al. (2013:704) argue that ‘how’ and ‘why’ cultural practices, and underlying values and norms, matter for entrepreneurial action remains underexplored and requires greater empirical attention.

Digital entrepreneurship has been posited as a means to overcome limitations in the institutional environment, including unsupportive cultural practices, with lower barriers to entry enabling the ‘democratisation’ of entrepreneurship (Nambisan, 2017). However, Dy et al.

* Corresponding author.

E-mail address: caren.crowley@msm.nl (C. Crowley).¹ The title is taken from the original titles voice-over for the TV series *Star Trek* from launch in 1966 to 1987:*Space: The final frontier**These are the voyages of the Starship, Enterprise**Its 5 year mission**To explore strange new worlds**To seek out new life and new civilizations**To boldly go where no man has gone before*

The phrase appears to have its origins in a paper prepared by the Presidential Science Advisory Committee (1958), which referred to the ‘compelling urge of man to explore and to discover, the thrust of curiosity that leads men to try to go where no one has gone before’. In 1987 with *Star Trek: The Next Generation* the wording was changed to ‘... where no one has gone before’ [in response to accusations of sexism].

<https://doi.org/10.1016/j.techfore.2018.07.051>

Received 7 December 2017; Received in revised form 14 July 2018; Accepted 22 July 2018

0040-1625/ © 2018 Published by Elsevier Inc.

(2017) argue that this conceptualisation of the Internet as a neutral and meritocratic space, particularly in the context of socially marginalised groups, remains significantly underexplored. Accordingly, the aim of this paper is to explore how female digital entrepreneurship develops in the presence of social and cultural institutional voids, which manifest as social practices and norms of behaviour unsupportive to entrepreneurship.

In order to achieve our research aim, our empirical setting is Saudi Arabia, an economically wealthy but underdeveloped economy, characterised by a masculine culture, heavily reliant on oil revenues, with ambitious plans to diversify and promote entrepreneurial growth (Kingdom of Saudi Arabia Government, 2016). According to Spigel and Harrison's (2018) classification of entrepreneurial ecosystems, Saudi Arabia is munificent in entrepreneurial resources such as access to finance but lacks a well-functioning social and cultural framework to support entrepreneurship. These limitations manifest as institutional voids, constraining entrepreneurial actions. In particular, Saudi Arabia's strict gender segregation means that women face additional difficulty in interacting with banks or accessing male dominated institutions or networks (Tlaiss, 2015). However, there is increasing anecdotal evidence to suggest that female entrepreneurs in Saudi Arabia are developing pragmatic solutions, based on digital technologies, to transcend such institutional voids and as a result are engaging in institution altering behaviour. We argue, that in pursuing digital entrepreneurship and navigating institutional voids, female digital entrepreneurs are enabling transformative change within the wider entrepreneurial economy.

This paper makes a number of theoretical and practical contributions with respect to how digital entrepreneurship develops in the presence of institutional voids and how subsequent entrepreneurial actions facilitate institution altering behaviour. First, we contribute to research on women's digital entrepreneurship by demonstrating that digital technology can have significant emancipatory potential for women doubly constrained by gender biases and a weak institutional framework. This is significant as prior research in the digital entrepreneurship domain predominantly focuses on the experiences of European and North American entrepreneurs (Dy et al., 2017; Nambisan, 2017). Second, we contribute to research on institutional voids by focusing on the informal rather than formal institutional environment. Prior research on the impact of institutions on entrepreneurship has primarily focused on formal institutions, such as legal, banking or regulatory policies on entrepreneurial ambitions or practices (Elert and Henrekson, 2017) with few studies examining how entrepreneurs are affected by the social and cultural context in which they are embedded. Third, and relatedly, we build on the work of Kim et al. (2016) and develop a micro-meso-macro level framework in which the meso-level analysis acts as a bridge between individual entrepreneurial action and the institutional context. Our examination of the meso-level reveals that the behaviour of many entrepreneurs acting independently has the potential to bring about transformational change in the institutional context (Kim et al., 2016).

This paper is structured as follows. We commence by outlining the key constructs of our theoretical framing, namely, institutional voids, digital entrepreneurship and institutional altering behaviour. Next, we outline our research design. This is followed by the critical evaluation of six biographical narrations of Saudi Arabian female digital entrepreneurs. Finally, we consider the implications of our arguments to advance theoretical and practical understanding of digital entrepreneurship in emerging economies characterised by institutional voids.

2. Theoretical framework

2.1. Institutional voids

There is a long-observed relationship between levels of institutional

and economic development (Castellachi, 2015; Chang, 2011) such that SMEs in emerging and developing economies, seen as catalysts of economic development (Mair et al., 2012), suffer from weak institutional contexts (Khanna and Palepu, 1997, 2000; Lee and Kim, 2009; Mair and Martí, 2009). In such environments, the enactment of laws and regulations is inefficient, corruption and bureaucracy is widespread, educational systems and infrastructures are weak, uncertainty and hence transaction costs are high and business environments are less stabilised by universalistic rules, all of which make entrepreneurial firms, which suffer from the liability of newness and related legitimacy challenges, particularly vulnerable (Mesquita and Lazzarini, 2008; Narooz and Child, 2017; Peng et al., 2008; Silvestre, 2015). From a new institutional economics perspective, the weakness of institutional environments is defined as the absence or lack of enforcement of formal market-based institutions, or institutional voids (a term originally attributable to Khanna and Palepu, 1997), although there is a counter-argument that even in the absence of these formal market-based institutions there is a 'swamp' of informal and non-market institutions which impinge on and constrain entrepreneurial activity (Olthaar et al., 2017).

Arising out of the wider interest in institutional theory in an entrepreneurial context (Bruton et al., 2010), the nature and impact of institutional voids has been studied in a number of settings. These include access to investment capital (Harrison et al., 2017), the operation of capital markets (Kim and Song, 2017), rural economic development (Mair et al., 2012; Mair and Martí, 2009), subsistence markets and agribusiness (Davies and Torrents, 2017), market entry by SMEs and the liability of outsidership (Fiedler et al., 2017), SME internationalisation (Narooz and Child, 2017), government intervention in access to finance (Armanios et al., 2017) and social innovation and social entrepreneurship (Turker and Vural, 2017). For the most part, this research makes no reference to gender and specifically the impact of institutional voids on women (exceptions include Mair et al., 2012; Chakrabarty and Bass, 2014; De Vita et al., 2014; Manolova et al., 2006; Boehe and Cruz, 2013), nor does it specifically address new venture creation per se (see Tracey and Phillips, 2011; Riddle et al., 2010; Williams and Vorley, 2015, for recent exceptions). Furthermore, there is almost no research on digital entrepreneurship and institutional voids other than Littlewood and Kiyumbu's (2018) analysis of hub organisations in Kenya, Drouillard's (2017) work on digital start-ups, also in Kenya, and Ngoasong's (2017) exploration of entrepreneurial digital competencies.

We argue that there is a close connection between the concept of institutional voids and that of the entrepreneurial ecosystem (Spigel and Harrison, 2018). Specifically, in a well-functioning ecosystem, institutional voids do not exist; policies will promote a regulatory environment and corporate governance system which support business, for instance protecting intellectual property, without being overly bureaucratic or burdensome for small or new businesses (Harrison and Leitch, 2010). Such policies will in turn facilitate the development of a supportive entrepreneurial infrastructure characterised by the availability of networks, role models, and accessible finance (Carlsson et al., 2013), supported by a supportive culture, reflected in a positive status of entrepreneurship, generalized trust, tolerance of failure and willingness to accept risk (Peng et al., 2008; Spigel and Harrison, 2018).

However, the three pillars of the entrepreneurial ecosystem – policy, infrastructure and culture – are not in practice equally developed in all entrepreneurial ecosystems, and the institutional voids that result have a detrimental effect on the functioning of the system as a whole. This is the basis for Spigel and Harrison's (2018) classification of entrepreneurial ecosystems, which examines the level of resources available (munificent or sparse) and network strength (well-functioning or poorly functioning). Munificent ecosystems are abundant in policies and infrastructure that support entrepreneurship, such as accessible finance, entrepreneurial knowledge, role models and skilled workers, while sparse systems lack these. Resource access is facilitated by a well-

functioning social and cultural framework supportive of entrepreneurship. According to this classification, economies dependent on natural resources aiming to diversify, such as Saudi Arabia, are likely to be characterised by an entrepreneurial ecosystem munificent in resources, such as entrepreneurial opportunities and finance (Kingdom of Saudi Arabia Government, 2016) but constrained by institutional voids in the social and cultural context. An unsupportive cultural context sets boundaries by limiting the social legitimacy of pursuing entrepreneurship (Krueger et al., 2013), and imposing sanctions for deviating from normal behaviour (Ahlstrom and Bruton, 2002).

In this paper, we examine the implications of institutional voids for female digital entrepreneurs as they develop and maintain their business. We do so in a very particular and under-researched context – Saudi Arabia. One of the features of so-called ‘sheiko-capitalism’ (Ali, 1995a, 1995b; Budhwar and Mellahi, 2007) and in particular of Saudi Arabia, is the presence of widespread market failures and institutional voids (Mellahi, 2007), the existence of which make alliances with powerful business groups or political actors essential for business success, whether as multinationals or international joint ventures on the one hand (Mellahi et al., 2011) or entrepreneurial start-ups and SMEs on the other (Abu Baker et al., 2017). In such circumstances, the response to underdeveloped institutions and frequent environmental shifts is the reliance on reputation – consisting of prominence, perceived quality and resilience – to address potential transaction uncertainty (Gao et al., 2017). For entrepreneurs and would-be entrepreneurs, building a positive reputation, although difficult to acquire, has a cumulative positive effect as a meta-resource or strategic asset (Rindova et al., 2005) that can in turn leverage other resources.

From an institutional perspective, reputation is embedded in the social context of the actors and comprises a set of collective beliefs about a firm shaped by the evaluations of high-status individuals and institutions (Gao et al., 2017; Rindova et al., 2005). Based on their business history analysis, Gao et al. (2017) identify three approaches to building reputation as a means of combatting the liability of social and economic “outsiderness”: through serendipity, using outside events to signal not just product quality but to engender belief in their ability to persistently deliver this quality; through providing a solution to a pressing need (and hence filling an institutional void), which captures the attention of the relevant stakeholders; and through partnerships, leveraging the reputation of an existing firm or firms for one’s own benefit (Stuart et al., 1999). Given that all three approaches are challenging (luck is unpredictable, filling an institutional void is complicated, getting a reputable firm to partner is difficult), how start-up entrepreneurs manage the generation of reputation in developing new products and services, reconfiguring markets and challenging institutional arrangements, remains a gap in our understanding which this research seeks to address.

2.2. Digital entrepreneurship

Digital entrepreneurship has been posited as a “great leveller” (Dy et al., 2017) leading to the ‘democratisation’ of entrepreneurship as entrepreneurs benefit from greater access to ideas, potential customers and necessary resources (Nambisan, 2017). In this paper, we define digital entrepreneurship as ‘the pursuit of opportunities based on the use of digital media and other information and communication technologies’ (Davidson and Vaast, 2010:2). The incorporation of digital architectures (e.g. online communities and social media) and artefacts (digital components, applications or media content) mean that spatial and temporal boundaries of entrepreneurial activities, when and where activities are carried out, are significantly less constrained and product and service opportunities are constantly evolving (Nambisan, 2017). In addition, the Internet attributes of convenience, ease of use, large audience reach, anonymity and interactivity (Case, 2016; Lin et al., 2015; Walther and Boyd, 2002) mean that digital entrepreneurship offers significant potential for those groups who face barriers to engagement

in bricks-and-mortar entrepreneurship (Novo-Corti et al., 2014; Shirazi, 2012). Accordingly, digital entrepreneurship is posited to facilitate the engagement of marginalised groups, with one such group being women, as online platforms develop and implement their own social and contractual frameworks that are often independent of local restrictions (Martin and Wright, 2005; Parket et al., 2016).

Dy et al. (2017) however challenges the notion of the Internet as a neutral and meritocratic platform for entrepreneurship. Sassen (2002) similarly argues that although advances in digital technologies offer significant potential for women to engage in entrepreneurship, these opportunities exist within the confines of existing social and cultural practices. Daniels (2009) likewise argues that women use the Internet in ways that resist but also reinforce hierarchies of gender. In examining female digital entrepreneurship in the UK context, a developed economy with significant wealth inequality, Dy et al. (2017) found that offline inequalities were simply replicated online, and digital technology was insufficient to overcome the resource constraints faced by immigrant women. However, in emerging economies, characterised by institutional voids, the transformative potential of digital entrepreneurship may be significantly greater than in developed countries. Shneor et al. (2013) found that in Turkey, women engage in entrepreneurship in a rate similar to men, however in Norway, a highly developed economy, women’s entrepreneurship significantly lags that of men. In order to explain this finding, Shneor et al. (2013) draw on Hofstede et al.’s (2004) thesis of ‘disaffected entrepreneurship’ wherein individuals are more likely to engage in entrepreneurship if they face significant difficulties operating within existing organisations (Shneor et al., 2013). As such, socially marginalised groups, including women (Boehe and Cruz, 2013; Calàs et al., 2009; Mair et al., 2012), may derive a greater benefit from using digital tools to enable entrepreneurship than women in developed countries.

Eriksson-Zetterquist (2009) argues that in order to understand the potential impact of technology it is essential to analyse the social and cultural context in which that technology is operationalized. The adoption of institutional voids as a theoretical lens enables the uncovering of factors that may constrain women’s ability to build sustainable and scalable businesses. Davidson and Vaast (2010: 4) argue that the socio-material nature of digital entrepreneurship, the overlapping of technology affordances and social practices, mean that the digital ‘entrepreneur himself/herself becomes an element within a complex of socio-material practices’ over which he/she may have some, if limited, influence.

2.3. Institution altering behaviour

While the entrepreneurial ecosystem approach views entrepreneurship as influenced by the system, it also highlights the importance of entrepreneurs as central players in the creation of the system and for keeping the system healthy (Stam and Spigel, 2017; McAdam et al., 2018; Isenberg, 2011). Elert and Henrekson (2017) argue that when faced with institutional voids, entrepreneurs can choose to abide, evade or alter the institutional framework. Digital entrepreneurship, in particular, is likely to give rise to institution evading or institution altering actions as ‘technology changes exponentially but social, economic and legal systems change incrementally’ (Downes, 2009: 2). While evasive entrepreneurship focuses on actions taken to circumvent institutional voids, institutional altering behaviour, involves individual or organisations constructing new institutions which may help to promote their organization or field (DiMaggio, 1998).

Current research on institution altering behaviour focuses primarily on how large corporations attempt to shape and influence government regulations (Hillman et al., 2004; Lawton et al., 2013; Oliver, 1991). However, the significant costs involved in driving regulatory change mean such a path may be closed to new and small entrepreneurial ventures. While Elert and Henrekson (2017) focus primarily on evasive

Table 1
Participant's characteristics.

	Age	Marital status/Children	Sole founder/partner	Industry sector	Product/Service	Years of operation	No. of employees
SJ	21–30	Married/no children	Partner	Jewellery	Product	3–5	6
AP	21–30	Unmarried/no children	Partner	Online application	Service	< 3	5
CC	31–40	Married/1 child	Sole founder	Food and beverage	Product	3–5	25
FB	31–40	Unmarried/no children	Partner	Digital marketing	Service	3–5	28
OS	31–40	Unmarried/no children	Sole founder	Online clothing	Product	< 3	5
GX	31–40	Unmarried/no children	Partner	Event management	Service	5–8	75

entrepreneurship, their understanding of how entrepreneurial actions effect institutional change is equally applicable to institution altering behaviour. As such, the effect of institution altering behaviour on institutions is largely indirect with entrepreneurial actions altering the de facto effect of institutions. By this logic, entrepreneurial actions which do not comply with institutional norms cause the institution in question to gradually lose significance and incremental or radical change may be formalised in changed laws and regulations surrounding entrepreneurial action. As [Ewert and Henrekson \(2017\)](#) argue, productive institution altering entrepreneurship deserves greater attention as a fundamental agent in the development of healthy entrepreneurial ecosystems. In the context of women in Saudi Arabia, pursuing entrepreneurship entails a fundamental challenge to social and cultural norms, which view women's primary place as being in the home and their primary commitment to the family ([Abu-Lughod, 2013](#); [Ahmad, 2011](#)). However, the extent to which digital technology allows women to navigate and alter unsupportive social and cultural practices through their engagement in digital entrepreneurship requires greater attention ([Dy et al., 2017](#)). In this paper, we contribute to this gap in understanding by addressing the following research question: How does female digital entrepreneurship emerge in the presence of significant institutional voids in the social and cultural context?

3. Methodology

3.1. Research Design

We adopted an interpretive case study methodology, which allows us to build an understanding of the properly contextualized experiences of female digital entrepreneurs in Saudi Arabia and as such “rather than being treated as a control variable, context becomes part of the story” ([Zahra and Wright, 2011](#): 72). Specifically, through semi-structured interviews we developed narrative biographies of women's lived experiences of digital entrepreneurship in Saudi Arabia. A narrative approach is particularly useful in understanding how aspects of the institutional context, social, political and economic ‘interweave and overlap’ in both public and private spheres ([Haynes, 2006](#); [Marlow and McAdam, 2015](#)). Our approach therefore enabled us to gain a deep insight into how the institutional context impacted women's pursuit of entrepreneurship and how their actions in turn impacted the social and cultural context.

Saudi Arabia was chosen as our research site for a number of reasons. First, it is an emerging economy, heavily dependent on oil revenues with ambitious plans to diversify the economy away from resource dependency and towards the promotion of new venture growth. The country's ambitious Vision 2030 plan ([Kingdom of Saudi Arabia Government, 2016](#)) details numerous policy initiatives focused on increasing SME activity to at least 30% of GDP ([Kingdom of Saudi Arabia Government, 2016](#)). As [Welter \(2011\)](#) argues, emerging economies undergoing fundamental economic and political changes are apposite settings in which to understand the impact of the institutional context on entrepreneurial processes and outcomes. Second, given the restrictive social and cultural practices, such as gender segregation and male guardianship, women are likely to be especially impacted by the presence of institutional voids. However, Saudi women's engagement in

entrepreneurship is significant, representing 38.6% of total entrepreneurs in Saudi Arabia ([GEM, 2017:25](#)), demonstrating that women in Saudi Arabia are willing and capable of developing new ventures. Third, in order to facilitate new venture growth and increase female participation in the labour force, the government has sought to foster a digital culture and the development of a digital economy. However, there is limited research detailing women's experiences of entrepreneurship in general and digital entrepreneurship in particular ([Dy et al., 2017](#)).

3.2. Data collection and analysis

In order to identify female digital entrepreneurs for inclusion in this research, we adopted a purposive sampling strategy ([Neergaard and Ulholi, 2007](#); [Pratt, 2009](#)). Potential participants were identified through the personal network of faculty at a local university in Riyadh, Saudi Arabia. Female entrepreneurs who matched the sampling criteria were invited to participate in the study and then were asked to suggest other possible participants. The sampling criteria focused on identifying female entrepreneurs based in Riyadh who founded the business on their own or in cooperation with others, were responsible for businesses reliant on digital technology, had been operating a minimum of two years and had at least five employees. Participants were interviewed in person during 2016–2017. Data collection consisted of numerous meetings with subsequent telephone conversations to clarify and expand upon specific issues. [Table 1](#) provides a summary of our participant's characteristics.

3.3. Degree of digitalisation

While the female digital entrepreneurs included in this research all founded businesses reliant on digital technology, the degree of digitisation varied. While AP (mobile application) and FB (digital marketing) could be characterised as high-tech, the other businesses were classified as digital due to their significant use of digital business processes. By including a range of digital businesses, rather than focusing on the niche area of high-tech businesses, we were thus able to assess the broad potential of digital technologies in enabling women in Saudi Arabia to navigate institutional voids ([Dy et al., 2017](#); [Neergaard et al., 2005](#)). [Table 2](#) provides a summary of the degree of digitisation of the businesses involved in our sample. While two of the firms offer digital

Table 2
Degree of digitisation in business model.

	Digital marketing	Digital selling	Digital goods	Digital distribution	Digital stakeholder management	Digital operations
SJ	Yes	Yes	No	Yes ^a	Yes	Yes ^a
AP	Yes	Yes	Yes	Yes	Yes	Yes
CC	Yes	Yes	No	Yes ^a	Yes	Yes ^a
FB	Yes	Yes	Yes	Yes	Yes	Yes ^a
OS	Yes	Yes	No	Yes ^a	Yes	Yes
GX	Yes	Yes	Yes ^a	No	Yes	Yes ^a

^a Indicates quasi-digital - a mixture of digital and non-digital processes.

Table 3
Interview schedule.

Background info	<p>Personal information: Age? Married/Single? Children?</p> <p>Business Information: Any other previous business? What types of goods/services does the company offer? How many years in in operation; No of employees? Can you give me an approximate of your yearly sales turnover? What funding source(s) did you use to start the company? Where do you sell your products/services? What are your future development plans for the business?</p>
Degree of digitisation	<p>How important is digital technology to your business? How does ICT impact the running of the business? Do you use the social media to interact with customers?</p>
Key challenges (institutional voids)	<p>What challenges have you faced in running a digital business (trust in online selling; developing digital capabilities; educating customers)? What key challenges or barriers did you face during in developing and maintaining the business (legal, financial, family, managerial)? Can you identify any “Critical incidents” – breaking points where things were critical, and tell me about them and how they were addressed?</p>
Social networks	<p>Entrepreneurs commonly rely on their social networks and people they know in order to help with early stages of start-up and also developmental stages. Tell me amount the types of “watsa” that you might have and how it helped you in setting up the business? Can you give examples of your watsa? Do you have a ‘mentor’ that you can turn to for advice?</p>
Family/Friends influence	<p>Are you a member of a women's business network, or do you know women in similar roles? Did your family influence your educational choices? How did your family feel about you setting up a business? Were your family/friends supportive when you decided to start the business? Did family responsibilities and expectations impact business growth and ambitions?</p>
Reflection	<p>Is there anything you would like to add regarding your experience of digital entrepreneurship? What advice would you give to other Saudi women wishing to start a business?</p>

products/services, in all cases digital technology was a key component of the value chain of the business. For instance, SJ a jewellery company uses social media as a key tool in developing their online social presence and customer relationships, building a powerful brand image of a local Saudi company, which distinguishes their jewellery from mass produced, international competitors. All firms utilized online communication tools to enable remote working, with two of the businesses having no physical headquarters.

The interviews were semi-structured in nature which ensured that all participants discussed a common set of questions relating to the digital components of the business, use of social networks and family and societal expectations, while also ensuring that participants were encouraged to elaborate on specific issues (Table 3). Thus, data collection developed as a guided account of the participant's experiences, perceptions, choices and actions in relation to digital entrepreneurship in the presence of institutional voids. The interviews were conducted at the respondent's workplace or home, lasted approximately 1 h, were audio-recorded and transcribed verbatim. Following the protocol identified by Leitch et al. (2010), we sought to ensure the validity and reliability of our data in two ways. First, we sought to ensure the accuracy of our interpretations via follow-up interviews with our participants (Morse, 1991); and second, we enable other researchers to determine the methodological veracity of our research design by providing a traceable chain of evidence (Pratt, 2009).

The semi-structured face-to-face interviews, follow-up phone calls and written notes resulted in a ‘critical mess’ (Gartner, 2010) of data. The NVivo qualitative data analysis software (QSOS International, Version 9) was used as an analytical tool in order to structure the material and to draw out salient themes. Analysis began by identifying repeated statements and grouping these into provisional categories and first order codes (Strauss and Corbin, 1990). We then engaged in axial coding, focusing on the ways in which these first order categories related to each other, in order to further condense the data into

theoretical categories (Locke, 1996; Strauss and Corbin, 1990). In the third stage of analysis, we developed aggregate theoretical dimensions (Corley and Gioia, 2004; Maitlis and Lawrence, 2003). Moving from first order codes to the development of aggregate theoretical dimensions was not linear but involved deep and recursive comparison of the data with emerging codes, resulting in the development of a robust understanding of how the data related to the theoretical constructs of our theoretical framing. The final data structure is illustrated in Table 4 which summarizes the key themes upon which the findings and discussion section is based.

4. Findings and discussion

Given our alignment with an interpretive, qualitative methodology, the results and discussion are now presented or integrated conjointly as suggested by Yin (2009). The aggregate theoretical dimensions are explored in detail and illustrated with fragments of the narrative or “power quotes” (Pratt, 2009). The findings are then discussed in the context of research on digital entrepreneurship, institutional voids and the emergence and implications of institution altering behaviour.

4.1. Institutional voids and institution altering behaviour

In relation to how female digital entrepreneurs in Saudi Arabia responded to institutional voids through engagement in institution altering behaviour, four key social and cultural voids and consequent responses were identified. First, issues resulting from cultural and legal practices of gender segregation were addressed through online working and use of a male secretary. Second, limited access to mentors and role models was addressed through engagement in pragmatic entrepreneurial networking. Third, lack of trust in online sellers was addressed through social media presence and the liaising with social media influencers to develop the reputation of the business. Finally,

Table 4
Data structure.

Creating provisional categories and first order codes	Theoretical categories (2nd order themes)	Aggregate theoretical dimensions
Statements about; the impact of social media; barriers caused by gender segregation; strategies for navigating gender boundaries; digital working in response to difficulties in travelling and interacting with men.	Social media engagement Gender segregation	Digital technology and gender boundaries
Statements about entrepreneurial family members; limited female entrepreneur role models; negative impact of wasta as unearned advantage; reduced effect of wasta in private sector; need to build your network; strategies for network building.	Digital working Entrepreneurial role models and mentors Wasta Network building	Entrepreneurial networking
Statements about; online selling in Saudi Arabia; trust in online retailers; limited use of credit cards; preference for cash on delivery; difficulty in accessing online payment platforms; use of social media influencers to build trust.	Online selling Credit card use	Building trust in online selling
Statements about; being a woman and an entrepreneur in Saudi Arabia; pushing the boundaries; being a pioneer; inspiring others; instigating change; family support; challenging familial expectations; balancing work and life stresses.	Social media influencers Societal expectations and family relationships Strategies for gaining family support Becoming a role model	Transforming family and societal expectations

Table 5
Examples of Institution Altering Behaviour.

Institutional voids	Responses to institutional voids	Examples of institution altering behaviour	Aggregate theoretical dimension
Gender segregation	Online working and use of male secretary	Digital technology and gender boundaries	Gender segregation of men and women
Limited access to role models	From WASTA to pragmatic networking	Entrepreneurial networking	Limited access to entrepreneurial mentors and role models
Lack of trust	Building trust through social media presence and relationships with social media influencers	Building trust in online selling	Lack of trust in online sellers and unwillingness to use credit cards
Family and societal expectations regarding women	Building support through sharing stories of success with family members	Transforming family and societal expectations	Family and societal expectations – a woman's place is in the home

family and societal expectations regarding women were addressed through the sharing of success stories and “small wins” with family members. Based on these findings, we then develop an original theoretical model depicting the multi-level and bi-directional interaction between individual entrepreneurial actions, institution altering behaviour and the social and cultural institutional context. Table 5, provides a summary of the response to institutional voids and institutional altering behaviours identified, which are examined below.

4.2. Digital technology and gender boundaries

The general sentiment amongst the participants was that digital working was considered an environment where women felt comfortable and a place where they could thrive (Plant, 1997; Sassen, 2002). This provision of a safe space appeared particularly relevant for the Saudi Arabian context in which social, cultural practices and legal frameworks sought to limit interaction between men and women (Abu-Lughod, 2013; Ahmad, 2011; Daniels, 2009). As CC remarked – “In Saudi, a small business is very male oriented, which is the norm. For you as a girl, it is difficult on so many levels. Personally, I am a shy person, around women I am not shy, around men I am shy”. Thus, digital working allowed the women to navigate limitations in the social and cultural context which would otherwise make working in a mixed-gender environment difficult. Welter (Welter, 2011; Welter and Smallbone, 2008), drawing on empirical analysis of female entrepreneurship in post-Soviet Uzbekistan, found that ascribed gender roles, specifically the belief that young women should stay at home until they are married, meant women's entrepreneurial ambitions were limited to home-based, low income and low growth industries. However, our findings indicate that

women in Saudi Arabia use digital technology to develop a space in which they feel comfortable outside the home, and to enable the development of scalable, high growth potential businesses.

Social and cultural gender-based norms in Saudi Arabia are supported by a legal framework that necessitates government offices to cater for men and women separately (Tlaiss, 2015). As FB explains access to information and required paperwork, is then restricted based on gender. “I wanted to get a form from the Ministry of labour, but they wouldn't allow women to go in there and the women's department couldn't help, because these services are only available in the men's department.”. However, the rapid adoption of digital technology in Saudi Arabia has resulted in much of the necessary information and paperwork now being available online. This is explained by OS “Actually, when I started, it was not easy of course to apply (for a commercial license) and to get a permit, it was a tough job. Now, they only have to apply online and they receive it within, I think 48 hours or something”. Thus, our findings indicate that digital technology can be used by women to transcend the norms of female behaviour (Berg, 1997) and at the same time avoid or minimize ‘gender trouble’ caused by the overt rejection of gendered norms of behaviour (Marlow and McAdam, 2015). To the extent that digital entrepreneurship both necessitates and enables the weakening of gender biases, entrepreneurial action provides the building blocks to social change (Calàs et al., 2009).

4.3. Entrepreneurial networking

Strong networks based on family ties are fundamental to the operation of Saudi Arabian society (Abu Baker et al., 2017). In particular, an individual's Wasta or network capital, which they can create through

their own actions or through belonging to a high-status family, may determine their resource access (Mellahi, 2007). However, the growing importance of private enterprise in Saudi Arabia has led to a decrease in the value of Wasta (Hutchings and Weir, 2006). “*It (Wasta) is relevant in the government sector. But here in the private sector your skills are your Wasta. If you have the skills you will be hired, simple as that, so the Wasta thing is not working anymore*” (GX). As a result, the old system of Wasta, which was viewed by our participants as a form of unearned advantage, is being replaced with business oriented, entrepreneurial networking in the private sector. However, notwithstanding widespread gender segregation in Saudi Arabia, male dominated networks were perceived as more beneficial than female-only networks (McAdam et al., 2018). This is summed up by AP, – “*We go to networking events but not female events. At female events, sometimes we get the sense that we know more than them. We need someone we can look up to... We attract a lot of attention because we are female. We have met a lot of potential investors, a lot of potential partners, sometimes employees, a lot of opportunities going to these seminars and meetings.*” As Marlow and McAdam (2015) argue, in such settings women may become “honorary men” however they are nonetheless defined by their ascribed femininity.

While all the women referred to mentors that they turned to for advice and emotional support, these were invariably male. Our findings demonstrate that women favoured male mentors, in part due to a shortage of accessible female mentors and the availability of entrepreneurial male family members. For example, CC identified her father as her primary mentor and a constant source of emotional support and encouragement. “*I used to cry. I swear I used to cry. I would go out and sit in the car, nobody saw me and my father was with me, and I would cry to him ‘I’m not cut out for this, I will mess up and he’s like – stop crying, don’t let them see you, you can do this!’.*” However, the women, also used the Internet to develop and maintain relationships with mentors outside their family and social circle. “*I had an online mentor; I had an American mentor; this was a secret. I respected him but he didn’t understand the culture. I now have a Saudi mentor who is really, really good. He understands the culture, diversity, man and woman relationships*” (FB). It is interesting that a male Saudi mentor was deemed especially valuable in navigating social and cultural issues, even though FB was herself a Saudi woman, highlighting the complexity of gender issues in Saudi Arabia. The use of male mentors, likely reflects the shortage of available female role models, but also the need to ‘think like a man’ in Saudi Arabia’s masculinised business environment (Marlow and McAdam, 2015; McAdam et al., 2018).

4.4. Building trust in online selling

Within Saudi Arabia, the concept of online selling is relatively new; trust in online marketers and use of credit cards is relatively low, with only 7.5% of Saudis willing to use credit cards online (Communication and Information Technology Commission, 2016). “*The idea of online shopping is not something that people are used to and I did struggle a bit in the beginning... Even if we told them we have a return policy, they did not trust that we would follow through and that we would push them to take the item*” (OS). Those therefore wishing to sell online must overcome significant barriers, both in terms of accessing the required infrastructural supports and establishing necessary trust with customers (Glover and Benbasat, 2010; Jones and Leonard, 2008). Obtaining access to a reliable payment gateway was also seen as a key challenge. “*the problem was the payment gateway. Because, here we don’t have any legal payment gateway, we have to use PayPal and for example when we use PayPal the minimum percentage they take is 12%*” (SJ).

Gao et al. (2017) found that in the presence of institutional voids in emerging markets entrepreneurs must focus on credible signalling of relevant information. Accordingly, social media influencers were deemed influential in developing consumer trust. “*In the beginning, we had to contact social media influencers to promote our site ... if there was no Instagram or no snapchat how would we reach people? It would be really*

difficult. Now you can just contact someone and they have millions of followers and in a second everyone can see you” (OS). The enhanced market penetration afforded by the Internet and social media was therefore critical in increasing the visibility and trustworthiness of the digital businesses, which otherwise might suffer in a purely offline context due to gendered assumptions, which view entrepreneurship as a largely masculine endeavour (Manolova et al., 2006). The ability of digital technology to facilitate reputation building is explained by GX, “*I remember when I first started to receive emails saying they wanted to order. I said okay, thank you for your order, we’ll get it out for you, we transfer your order to the warehouse. And actually, I had no warehouse, it was my house. So, I would open the warehouse email and I would say we received your order and we will get it out to you, it will go to the shipping officer in two days. And the shipping officer was actually my brother! So, you know I created all this and people would deal with me thinking I was a big co-operation, a big company that deals with a lot of things and who is trustworthy*”.

In addition, our findings indicate that the reputation building benefits of having a strong online presence can also enhance self-efficacy and self-belief as online selling can provide valuable feedback regarding product/service demand and viability. This is summed up by CC – “*When we launched the machine in 2013 - that’s when I knew we had quick growth. The day we launched it, we sold out, we had orders from 8 different countries.*” As such, digital technology facilitates positive reputation building which can be leveraged as a meta-resource or strategic asset (Davidson and Vaast, 2010; Rindova et al., 2005). Interestingly, Boeche and Cruz (2013) argue that in emerging economies characterised by instability and significant institutional voids, female entrepreneurs perform better in terms of business debt repayment than their male counterparts, however in more stable economic environments, men outperform women in terms of debt repayment. If the ability to repay business debt can be taken as a proxy for entrepreneurial success, women’s ability to repay debt in unstable economic environments may be viewed as evidence that women are better able to develop creative solutions and navigate institutional voids when compared to men. However, when these voids disappear women start to lose their advantage. As such, the far reaching and instantaneous feedback enabled by online selling may be pivotal in closing the gap in female and male entrepreneurship in both emerging and developed economies (Welter and Smallbone, 2008).

4.5. Transforming family and societal relationships

According to Islamic teaching, Khadija the first wife of the prophet was an entrepreneur. Drawing on Khadija as an example, the women in our study were keen to point out that their religion supported female entrepreneurship but that resistance came from family members and societal expectations. “*She [Khadija] was an inspiration. I took her as a role model. I always read about her business. I always read about how she dealt with her community with her husband, with every business step she went through*” (SJ). Islam prioritises family relationships and in the Saudi Arabian context, family relationships and embeddedness are at the centre of the social order (Davis et al., 2000; Peterson, 2001). In examining women’s entrepreneurship in the North American context, Aldrich and Cliff (2003) demonstrate that family relationships can influence opportunity emergence and recognition, the decision to set up a new venture and access to resources. Our results suggest that this is especially relevant in the context of Saudi Arabia. Women in Saudi Arabia who work outside the home tend to work in traditional feminised roles such as teaching or in supporting positions in the government sector, with relatively short working hours, normally ending at 2 pm. “*They (parents) gave me a hard time. When I would stay in the office until 8 in the evening my mum would call and say – if you had your University job you wouldn’t still be there*” (FB). In addition, to longer hours, entrepreneurship, including digital entrepreneurship, necessitates long distance travel. However, it is not deemed appropriate for Saudi women

to travel without a male guardian (Tlaiss, 2014; Tlaiss, 2015). “So, being in business means travelling, travelling alone. It means interacting with men face to face” (CC). However, as a consequence of engaging in digital entrepreneurship, the women were actively challenging and indirectly altering these cultural norms (Ewert and Henrekson, 2017). As GX explains, “Now they accept it and they are supportive and they allow me to travel alone. Sometimes, ironically when my sister wants to travel they say, ok you are going to go with your sister now or you are not going! I’m the guardian now, ha!”

One of the key strategies used by the women to gain familial support was the telling of stories about their daily successes or “small wins”. “Whenever I have a speech to give I always share it with them. To make them feel the success, to make them proud and to believe in FB” (FB). In sharing their success stories with family members and in entering into entrepreneurship, previously the sole preserve of men in Saudi Arabia (Tlaiss, 2015), the women were able to redefine their relationships with family members, especially with their fathers. As CC eloquently explains - “because it was the first time I spoke his language”. In addition to transforming family relationships, the women were also seeking to enable societal level changes by acting as role models and inspiring leaders for other women in Saudi Arabia. As GX explains, “I had no skills and no family connections at all and I was able to do it, if I was able to do it then everybody can do it. So, I hope that I can inspire more people.” This sentiment is echoed by SJ, “I always like to think that we actually created this opportunity for other Saudi ladies. I am actually very proud of that, I don’t feel any competition or anything.”

4.6. Entrepreneurial action and the socio-cultural context

In summary, our analysis demonstrates that in the presence of institutional voids in the social and cultural context, female entrepreneurs may draw on digital technologies to navigate such voids (Ewert and Henrekson (2017) and in doing so engage in institution altering behaviour by increasing women’s legitimacy as entrepreneurs in the Saudi Arabian context. According to Mair et al. (2012), in order for women to benefit from economic development and participate in market transactions, they must first be viewed as legitimate entrepreneurs. In acting as role models and mentors to potential female entrepreneurs in Saudi Arabia, the women are facilitating the diffusion of pro-female entrepreneurial values and patterns of thinking (Krueger et al., 2013) and thus reducing the sanctions faced by the next generation of female entrepreneurs for deviating from behavioural norms, customs and practices unsupportive of female entrepreneurship (Ahlstrom and Bruton, 2002).

Fig. 1 illustrates our proposed theoretical model developed from our findings. Welter (2011) argues that there is a need to draw attention not

only to the impact that social and cultural context has on entrepreneurial behaviour but also to the impact of entrepreneurial agency on the institutional cultural context. While Welter (2011) focuses on the top-down impact of context on entrepreneurial behaviour, drawing on Dopfer et al. (2004) she recommends that future work should incorporate meso-level analysis to act as a bridge between micro and macro levels. Our theoretical model responds to this recommendation by making explicit the link between micro-level entrepreneurial action, meso-level institution altering behaviour and the macro-level socio-cultural context. A two-way causal interaction implies both top down and bottom up processes. As outlined in Fig. 1, our findings indicate that not only does the socio-cultural context influence women’s entrepreneurial propensity and actions but that women’s entrepreneurial action can lead to change in the socio-cultural context. Building on Kim et al. (2016) and Hedström and Weinberg (2017), we argue that transformational change occurs at the meso-level. Our findings indicate that digital technology provides a meaningful pathway to entrepreneurship for women constrained by gender biases and an unsupportive institutional framework. Transformational change then occurs at the meso-level as the number of female entrepreneurs increase, and women engage in role modelling and mentoring behaviour encouraging greater female participation in entrepreneurship. This will then lead to both intended and unintended changes in the macro socio-cultural context (Hedström and Weinberg, 2017; Kim et al., 2016). As previously mentioned, in Saudi Arabia family relationships are at the centre of the social order (Davis et al., 2000; Peterson, 2001). Our findings demonstrate that by engaging in entrepreneurship women are fundamentally changing their family relationships which in turn demonstrate the potential for significant societal change.

Prior research on emerging economies has highlighted a two-way interactive relationship between entrepreneurial action and the social and cultural context (Ewert and Henrekson, 2017; McAdam et al., 2018; Spigel and Harrison, 2018; Stam, 2015; Welter, 2011). In this paper, we unpack the dynamics of this interaction and provide new insights by illustrating the mediating effect of institution altering behaviour. We provide empirical evidence that digital entrepreneurship, in particular, is likely to give rise to institution altering behaviour, as social, economic and legal systems are likely to lag technological innovations (Downes, 2009). In so doing, we respond to calls by Ewert and Henrekson (2017) to pay more attention to productive institution altering entrepreneurship as a fundamental agent in the development of healthy entrepreneurial ecosystems. In addition, we operationalise Welter’s (2011) micro-meso-macro level framework in order to understand the interaction between entrepreneurial action and the social and cultural institutional context. Our novel findings illustrate that women

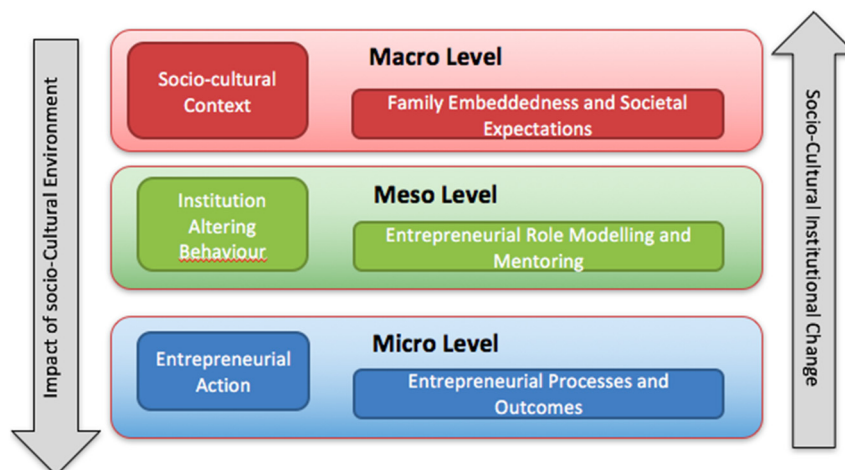


Fig. 1. Causal interaction, entrepreneurial action and the socio-cultural context.

in Saudi Arabia utilise digital technology not only to navigate but also to alter unsupportive social and cultural practices through their engagement in digital entrepreneurship. Institutional change is subsequently affected as the social and cultural norms which constrain women's entrepreneurship gradually lose significance or are directly challenged through role modelling and mentoring behaviour. While the model in Fig. 1 was developed to explain the two-way interaction between women's digital entrepreneurship and the socio-cultural context in Saudi Arabia, we believe that the resulting model can be generalized and is transferable to other contexts where women are doubly constrained by gender biases and voids in the institutional context (Hedström and Weinberg, 2017); for instance, post-soviet societies with traditional gender roles for women (Welter and Smallbone, 2008).

5. Conclusion and future research

This paper examined how digital entrepreneurship emerges in the presence of significant institutional voids in the social and cultural context. The empirical setting for our research is Saudi Arabia, an emerging economy undergoing fundamental economic and political changes, thereby providing a rich reproach setting in which to understand the impact of the institutional context on entrepreneurial processes and outcomes (Welter, 2011). Accordingly, our empirical findings, presented as narrative biographies of six female digital entrepreneurs, demonstrate that digital technologies facilitate the navigation and bridging of socio-cultural institutional voids. In addition, as consequence of engaging in digital entrepreneurship, women in Saudi Arabia are both directly and indirectly altering the existing institutional context (Eltor and Henrekson, 2017; Welter, 2011).

Through the provision of these novel findings, we make three key theoretical contributions. First, we contribute to research on women's digital entrepreneurship by demonstrating that digital technology has significant emancipatory potential for women in emerging economies. Our findings demonstrate that digital technology has the potential to provide women with a safe space, where they can flourish and pursue digital entrepreneurship, when the socio-cultural context may be unsupportive. This finding is significant as prior research in the digital entrepreneurship domain predominantly focuses on the experiences of European and North American entrepreneurs (Dy et al., 2017; Nambisan, 2017). Second, we contribute to research on institutional voids by focusing on the informal rather than formal institutional environment. While prior research has highlighted the importance of voids - economic, legal and political - in the formal institutional framework, significantly less attention has been paid to the impact of informal social and cultural practices on entrepreneurship (Welter, 2011). Our third and final contribution builds on Kim et al. (2016) and lies in the development of an original, multi-level, theoretical model demonstrating the two-way interaction between entrepreneurial action, institution altering behaviour and the social and cultural context, and provides a framework for future research. While prior work has highlighted the impact of the socio-cultural context on entrepreneurial behaviour (Eltor and Henrekson, 2017; Welter, 2011), our study highlights the importance of meso-level analysis which bridges micro and macro context. Specifically, our findings reveal that by pursuing entrepreneurship women engage in role modelling and mentoring behaviour encouraging other Saudi women to pursue entrepreneurship. As the numbers of female entrepreneurs increase, this will likely lead to significant change in the socio-cultural context. The potential of this change is supported by our findings which indicate transformational change in women's family relationships as a consequence of engagement in entrepreneurship. Accordingly, digital technology enables women to navigate unsupportive socio-cultural contexts in order to pursue entrepreneurship and thus transform their lived realities, both in terms of their position within the family and in changing societal expectations regarding gendered norms of behaviour. The transformative potential of digital entrepreneurship is realized when women develop

increased self-efficacy, self-belief and act as role models and inspiring leaders for potential female entrepreneurs.

Our examination of digital female entrepreneurship in the presence of institutional voids suggests a number of avenues for future research. While in-depth narrative biographies were used to provide deep insight into women's challenges, beliefs and motivations surrounding digital entrepreneurship within the Saudi Arabian context, future research should adopt a multi-level, multi-method longitudinal approach to better understand the interaction between micro-meso-macro levels of analysis. Such an approach could combine statistical data on women's participation in entrepreneurship with surveys of societal attitudes and in-depth interviews with female entrepreneurs, collected over a five-year period for example, in order to glean a more nuanced understanding of the two-way interaction between women's entrepreneurial behaviour and the rapidly changing institutional context. Secondly, we acknowledge that gender intersects with other markers of difference, such as economic status and social class, and accordingly, digital technologies may not have the same transformative potential for all women in Saudi Arabia (Daniels, 2009). As such future research is needed to understand how ascribed social roles interact with gender to increase understanding of the impact of digital technology on women's daily lives. While we acknowledge these limitations as promising avenues for future work, we believe that we advance understanding of digital entrepreneurship through the provision of unique insights into how digital technologies can bridge limitations in the socio-cultural context to facilitate women's pursuit of digital entrepreneurship.

References

- Abu Baker, A.R., Ahmed, S.Z., Wright, N.S., Skoko, H., 2017. The propensity to business startup: evidence from Global Entrepreneurship Monitor (GEM) data in Saudi Arabia. *Journal of Entrepreneurship in Emerging Economies* 9, 263–285.
- Abu-Lughod, L., 2013. *Do Muslim Women Need Saving?* Harvard University Press, Cambridge, Massachusetts and London, England.
- Ahlstrom, D., Bruton, G.D., 2002. An institutional perspective on the role culture in shaping strategic actions by technology-focused entrepreneurial firms in China. *Enterp. Theory Pract.* 26 (4), 53–70.
- Ahmad, S.Z., 2011. Evidence of the Characteristics of women entrepreneurs in the Kingdom of Saudi Arabia: an empirical investigation. *Int. J. Gen. Entrep.* 3 (2), 123–143.
- Aldrich, H.E., Cliff, J.E., 2003. The pervasive effects of family on entrepreneurship: toward a family embeddedness perspective. *J. Bus. Ventur.* 18 (5), 573–596.
- Ali, A., 1995a. Cultural discontinuity in Arab management thought. *International Studies in Management and Organization* 25 (3), 7–30.
- Ali, A., 1995b. Preface: management in a Sheikh-Capitalist system. *International Studies in Management and Organization* 25 (3), 3–6.
- Armanios, D.E., Eesley, C.E., Li, J., Eisenhardt, K.M., 2017. How entrepreneurs leverage institutional intermediaries in emerging economies to acquire public resources. *Strateg. Manag. J.* 38 (7), 1373–1390.
- Berg, N.G., 1997. Gender, place and entrepreneurship. *Entrep. Reg. Dev.* 9 (3), 259–268.
- Boeie, D.M., Cruz, L.B., 2013. Gender and microfinance performance: why does the institutional context matter? *World Dev.* 47, 121–135.
- Bruton, G.D., Ahlstrom, D., Li, H.L., 2010. Institutional theory and entrepreneurship: where are we now and where do we need to move in the future? *Enterp. Theory Pract.* 34 (3), 421–440.
- Budhwar, P., Mellahi, K., 2007. Introduction: human resources management in the Middle East. *Int. J. Hum. Resour. Manag.* 18, 2–10.
- Calàs, M.B., Smircich, L., Bourne, K.A., 2009. Extending the boundaries: reframing “entrepreneurship as social change” through feminist perspectives. *Acad. Manag. Rev.* 34 (3), 552–569.
- Carlsson, B., Braunerhjelm, P., McKelvey, M., Olofsson, C., Persson, L., Ylinenpää, H., 2013. The evolving domain of entrepreneurship research. *Small Bus. Econ.* 41 (4), 913–930.
- Case, D., 2016. *The Third Wave: An Entrepreneurs Vision of the Future.* Simon and Schuster (ISBN-10: 1501140752).
- Castellachi, F., 2015. Institutional voids or organizational resilience? Business groups, innovation and market development in Latin America. *World Dev.* 70, 43–58.
- Chakrabarty, S., Bass, A.E., 2014. Institutionalizing ethics in institutional voids: Building positive ethical strength to serve women microfinance borrowers in negative contexts. *J. Bus. Ethics* 119 (4), 529–542.
- Chang, H.-J., 2011. Institutions and economic development: theory, policy and history. *J. Inst. Econ.* 7, 473–498.
- Communication and Information Technology Commission, 2016. *Annu. Rep. 2016* (Available from: http://www.citc.gov.sa/ar/mediacenter/annualreport/Documents/POR_REP_012A.pdf [Accessed 1 February 2017]).
- Coryor, K.G., Gioia, D.A., 2004. Identity ambiguity and change in the wake of a corporate spin-off. *Adm. Sci. Q.* 49, 173–208.

- Daniels, J., 2009. Rethinking cyberfeminism(s): race, gender, and embodiment. *Women's Stud. Q.* 37 (1–2), 101–124.
- Davidson, E., Vaast, E., 2010. Digital entrepreneurship and its sociomaterial enactment. In: Paper Presented at 43rd Hawaii International Conference on Systems Sciences (HICSS), 5–8th January 2010.
- Davies, I.A., Torrents, A., 2017. Overcoming Institutional Voids in Subsistence Marketplaces: a Zimbabwean Entrepreneurial Case. *Journal of Macromarketing* 37 (3), 255–267.
- Davis, J.A., Pitts, E.L., Cormier, K., 2000. Challenges facing family companies in the Gulf Region. *Fam. Bus. Rev.* 13 (30), 217–238.
- De Vita, L., Mari, M., Poggesi, S., 2014. Women entrepreneurs in and from developing countries: Evidences from the literature. *Eur. Manag. J.* 32 (3), 451–460.
- DiMaggio, P., 1998. The new institutionalisms: avenues of collaboration. *J. Inst. Theor. Econ. (JITE)/Z. Gesamte. Staatswissenschaft* 154 (4), 696–705.
- Dopfer, K., Foster, J., Potts, J., 2004. Micro-meso-macro. *J. Evol. Econ.* 14 (3), 263–279.
- Downes, L., 2009. *The Laws of Disruption: Harnessing the New Forces that Govern Life and Business in the Digital Age*. Basic Books, New York.
- Drouillard, M., 2017. Addressing voids: how digital start-ups in Kenya create market infrastructure. In: *Digital Kenya*. Palgrave Macmillan, UK, pp. 97–131.
- Dy, A.M., Marlow, S., Martin, L., 2017. A web of opportunity or the same old story? Women digital entrepreneurs and intersectionality theory. *Hum. Relat.* 70 (3), 286–311.
- Elert, N., Henrekson, M., 2017. Entrepreneurship and institutions: a bidirectional relationship. In: *Research Institute of Industrial Economics, IFN Working Paper No. 1153*. (Available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2919242. [Accessed on October 30th 2017]).
- Eriksson-Zetterquist, U., 2009. Using new Technology to Re-construct Gender. University of Gothenberg, Göteborg ([ONLINE]. Available at: <https://gupea.uu.se/handle/2077/20892> [Accessed 26 July 2017]).
- Fiedler, A., Fath, B.P., Whittaker, D.H., 2017. Overcoming the liability of outsidership in institutional voids: Trust, emerging goals, and learning about opportunities. *Int. Small Bus. J.* 35 (3), 262–284.
- Gao, C., Zuzul, T., Jones, G., Khanna, T., 2017. Overcoming institutional voids: a reputation-based view of long-run survival. *Strateg. Manag. J.* 38, 2147–2167.
- Gartner, W., 2010. A new path to the waterfall: a narrative on a use of narrative. *Int. Small Bus. J.* 28 (1), 6–20.
- Giacomin, O., Janssen, F., Guyot, J.-L., Lohest, O., 2011. Opportunity and/or necessity entrepreneurship? The impact of the socio-economic characteristics of entrepreneurs. In: *Munich Personal RePEc Archive*.
- Global Entrepreneurship Monitor Consortium, 2017. *GEM Global Entrepreneurship Monitor – Kingdom of Saudi Arabia Report 2016/2017*. ([ONLINE]. Available at: <http://www.mbsc.edu.sa/gem-saudi>. [Accessed 26 July 2017]).
- Glover, S., Benbasat, I., 2010. A comprehensive model of perceived risk of e-commerce transactions. *Int. J. Electron. Commer.* 15 (2), 47–78.
- Harrison, R.T., Leitch, C., 2010. Voodoo institution or entrepreneurial university? Spin-off companies, the entrepreneurial system and regional development in the UK. *Reg. Stud.* 44 (9), 1241–1262.
- Harrison, R., Scheela, W., Lai, P.C., Vivekarajah, S., 2017. Beyond institutional voids and the middle-income trap: the emerging business angel market in Malaysia. *Asia Pac. J. Manag.* 1–27.
- Haynes, K., 2006. Linking narrative and identity construction: using autobiography in accounting research. *Crit. Perspect. Account.* 17 (4), 399–418.
- Hedström, P., Weinberg, K., 2017. Causal mechanisms in organization and innovation studies. *Innovation* 19 (1), 91–102.
- Hillman, A., Keim, G., Schuler, D., 2004. Corporate political activity: a review and research agenda. *J. Manag.* 30 (6), 837–857.
- Hofstede, G., 2001. *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations*, 2nd ed. Sage, Thousand Oaks, CA.
- Hofstede, G., Noorderhaven, N., Thurik, R., Uhlander, L., Wennekers, A., Wildeman, Ralph E., 2004. Culture's role in entrepreneurship: self-employment out of dissatisfaction. In: Brown, T., Ulijn, J. (Eds.), *Innovation, Entrepreneurship and Culture*. Edward Elgar, Cheltenham, pp. 162–203.
- Hutchings, K., Weir, D., 2006. Guanxi and wasta: a comparison. *Thunderbird International Business Review* 48 (1), 141–156.
- Isenberg, D., 2011. The entrepreneurship ecosystem strategy as a new paradigm for economic policy: principles for cultivating entrepreneurship. In: *The Babson Entrepreneurship Ecosystem Project*.
- Jones, K., Leonard, L.N.K., 2008. Trust in consumer-to-consumer electronic commerce. *Inf. Manag.* 45 (2), 88–95.
- Khanna, T., Palepu, K., 1997. Why focused strategies may be wrong for emerging markets. *Harv. Bus. Rev.* 75 (4), 41–51.
- Khanna, T., Palepu, K., 2000. The future of business groups in emerging markets: long-run evidence from Chile. *Acad. Manag. J.* 43, 268–285.
- Kim, H., Song, J., 2017. Filling institutional voids in emerging economies: the impact of capital market development and business groups on M&A deal abandonment. *J. Int. Bus. Stud.* 48 (3), 308–323.
- Kim, P.H., Wennberg, K., Croidieu, G., 2016. Untapped Riches of Meso-Level applications in Multilevel Entrepreneurship Mechanisms. *Acad. Manag. Perspect.* 30 (3), 273–291.
- Kingdom of Saudi Arabia Government, 2016. *Vision 2030*. In: *Council for Economic and Development Affairs*, ([ONLINE] Available at: http://vision2030.gov.sa/sites/default/files/report/Saudi_Vision2030_EN_0.pdf. [Accessed 26 July 2017]).
- Krueger, N., Liñán, F., Nabi, G., 2013. Cultural values and entrepreneurship. *Entrep. Reg. Dev.* 25 (9–10), 703–707.
- Lawton, T., Steven, M., Rajwani, T., 2013. Corporate political activity: a literature review and research agenda. *Int. J. Manag. Rev.* 15 (1), 86–105.
- Lee, K., Kim, B.-Y., 2009. Both institutions and policies matter but differently for different income groups of countries: determinants of long-run economic growth reconsidered. *World Dev.* 37, 533–549.
- Leitch, C.M., Hill, F.M., Harrison, R.T., 2010. The philosophy and practice of interpretivist research in entrepreneurship: quality, validation and trust. *Organ. Res. Methods* 13 (1), 67–84.
- Lin, C., Atkin, D., Cappotto, C., Davis, C., Dean, J., Eisenbaum, J., House, K., Lange, R., Merceron, A., Metzger, Mitchum, Nicholls, A., Vindican, S. H., 2015. Ethnicity, digital divides and uses of the internet for health information. *Comput. Hum. Behav.* 5, 216–223.
- Littlewood, D.C., Kiyumbu, W.L., 2018. “Hub” organisations in Kenya: what are they? What do they do? And what is their potential? *Technol. Forecast. Soc. Chang.* 131, 276–285.
- Locke, K., 1996. A funny thing happened? The management of consumer emotions in service encounters. *Organ. Sci.* 7 (1), 40–59.
- Mair, J., Marti, I., 2009. Entrepreneurship in and around institutional voids: a case study from Bangladesh. *J. Bus. Ventur.* 24, 419–435.
- Mair, J., Marti, I., Ventresca, M.J., 2012. Building inclusive markets in rural Bangladesh: how intermediaries work institutional voids. *Acad. Manag. J.* 55 (4), 819–850.
- Maitlis, S., Lawrence, T.B., 2003. Orchestral manoeuvres in the dark: Discourse and politics in the failure to develop an artistic strategy. *J. Manag. Stud.* 40, 109–139.
- Manolova, T.S., Manev, I.M., Carter, N.M., Gyoshev, B.S., 2006. Breaking the family and friends' circle: Predictors of external financing usage among men and women entrepreneurs in a transitional economy. *Ventur. Cap.* 8 (02), 109–132.
- Marlow, S., McAdam, M., 2015. Incubation or induction? Gendered identity work in the context of technology business incubation, entrepreneurship, theory and practice. *Enterp. Theory Pract.* 39 (4), 791–816.
- Martin, M., Wright, L.T., 2005. No gender in cyberspace? Empowering entrepreneurship and innovation in female run ICT firms. *International Journal of Entrepreneurial Behaviour and Research* 11 (2), 162–178.
- McAdam, M., Leitch, C.M., Harrison, R.T., 2018. Stories from the field: women's networking from the field: women's networking as gender capital in entrepreneurial ecosystems. *Small Bus. Econ.* 1–16.
- Mellahi, K., 2007. The effect of regulations on HRM: private sector firms in Saudi Arabia. *Int. J. Hum. Resour. Manag.* 18, 85–99.
- Mellahi, K., Demirbag, M., Riddle, L., 2011. Multinationals in the Middle East: challenges and opportunities. *J. World Bus.* 46 (4), 406–410.
- Mesquita, L.F., Lazzarini, S.G., 2008. Horizontal and vertical relationships in developing economies: implications for SME's access to global markets. *Acad. Manag. J.* 51, 359–380.
- Morse, J.M., 1991. Approaches to qualitative-quantitative methodological triangulation. *Nurs. Res.* 40, 120–123.
- Nambisan, S., 2017. Digital entrepreneurship: toward a digital technology perspective of entrepreneurship. *Enterp. Theory Pract.* 41 (6), 1029–1055.
- Naroz, R., Child, J., 2017. Networking responses to different levels of institutional void: a comparison of internationalizing SMEs in Egypt and the UK. *Int. Bus. Rev.* 26, 683–696.
- Neergaard, H., Ulholi, J., 2007. *Handbook of Qualitative Research Methods in Entrepreneurship*. Edward Elgar Publishing Limited, London.
- Neergaard, H., Shaw, E., Carter, S., 2005. The impact of gender, social capital and networks on business ownership – a research agenda. *International Journal of Entrepreneurial Behaviour and Research* 11 (5), 338–357.
- Ngoasong, M.Z., 2017. Digital entrepreneurship in a resource-scarce context: a focus on entrepreneurial digital competencies. *Journal of Small Business and Enterprise Development*. <https://doi.org/10.1108/JSBED-01-2017-0014>.
- Novo-Corti, I., Varela-Candamio, L., García-Álvarez, M., 2014. Breaking the walls of social exclusion of rural women by means of ICTs: the case of 'digital divides' in Galician. *Comput. Hum. Behav.* 30, 497–507.
- Oliver, C., 1991. Strategic responses to institutional processes. *Acad. Manag. Rev.* 16 (1), 145–179.
- Olthaar, M., Dolsma, W., Lutz, C., Noselett, F., 2017. Markets and institutional swamps: tensions confronting entrepreneurs in developing countries. *J. Inst. Econ.* 13 (2), 243–269.
- Parke, G., Alsyne, M., Choudary, S., 2016. *Platform Revolution: How Networked Markets are Transforming the Economy, and How to Make Them Work for You*. W. Norton & Company (ISBN-10: 0393249131).
- Peng, M.W., Wang, D.Y.L., Jiang, Y., 2008. An institution-based view of international business strategy: a focus on emerging economies. *J. Int. Bus. Stud.* 39, 920–936.
- Peterson, J.E., 2001. Rulers, merchants and sheikhs in gulf politics. In: Alsharekh, A. (Ed.), *The Gulf Family: Kinship Policies and Modernity*. Saqi, London, pp. 21–36.
- Plant, S., 1997. *Zeroes + Ones: Digital Women + the New Technoculture*. Fourth Estate, London.
- Pratt, M., 2009. For the lack of a boilerplate: tips on writing up (and reviewing) qualitative research. *Acad. Manag. J.* 52 (5), 856–862.
- Presidential Science Advisory Committee, 1958. *Introduction to Outer Space*. PSAC, Washington DC.
- Riddle, L., Hrivnak, G.A., Nielsen, T.M., 2010. Transnational diaspora entrepreneurship in emerging markets: bridging institutional divides. *J. Int. Manag.* 16 (4), 398–411.
- Rindova, V.P., Williamson, I.O., Petkova, A.P., Sever, J.M., 2005. Being good or being known: an empirical examination of the dimensions, antecedents and consequences of organizational reputation. *Acad. Manag. J.* 48, 1033–1049.
- Sassen, S., 2002. Towards a sociology of information technology. *Curr. Sociol.* 50 (3), 365–388.
- Shirazi, F., 2012. Information and communication technology and women empowerment in Iran. *Telematics Inform.* 29 (1), 45–55.
- Shneor, R., Camgoz, Selin M., Karpinar, Pinar, B., 2013. The interaction between culture and sex in the formation of entrepreneurial intentions. *Entrep. Reg. Dev.* 25 (09–10),

- 781–803.
- Silvestre, B.S., 2015. Sustainable supply chain management in emerging economies: environmental turbulence, institutional voids and sustainability trajectories. *Int. J. Prod. Econ.* 167, 156–169.
- Spigel, B., Harrison, R., 2018. Towards a process theory of entrepreneurial ecosystems. *Strateg. Entrep. J.* 12 (1), 151–168.
- Stam, E., 2015. Entrepreneurial ecosystems and regional policy: a sympathetic critique. *Eur. Plan. Stud.* 23 (9), 1759–1769.
- Stam, E., Spigel, B., 2017. Entrepreneurial ecosystems. In: Blackburn, R., De Clercq, D., Heinonen, J., Wang, Z. (Eds.), *Handbook for entrepreneurship and small business*. SAGE, London.
- Strauss, A., Corbin, J., 1990. Grounded theory research: procedures, canons and evaluative criteria. *Qual. Sociol.* 13 (1), 3–21.
- Stuart, T.E., Hoang, H., Hybels, R.C., 1999. Interorganizational endorsements and the performance of entrepreneurial ventures. *Adm. Sci. Q.* 44, 315–349.
- Tlaiss, H.A., 2014. Between the traditional and the contemporary: careers of women managers from a developing Middle Eastern country perspective. *Int. J. Hum. Resour. Manag.* 25 (20), 2858–2880.
- Tlaiss, H.A., 2015. How Islamic business ethics impact women entrepreneurs: insights from four Arab Middle Eastern countries. *J. Bus. Ethics* 129, 859–877.
- Tracey, P., Phillips, N., 2011. Entrepreneurship in emerging markets. *Manag. Int. Rev.* 51 (1), 23–39.
- Turker, D., Vural, C.A., 2017. Embedding social innovation process into the institutional context: Voids or supports. *Technol. Forecast. Soc. Chang.* 119, 98–113.
- Walther, J., Boyd, S., 2002. Attraction to computer-mediated social support. In: Lin, C., Atkin, D. (Eds.), *Communication Technology and Society: Audience Adoption and Uses*. Hampton Press, Cresskill, NJ, pp. 153–188.
- Welter, F., 2011. Contextualising Entrepreneurship – Conceptual Challenges and Ways Forward. *Enterp. Theory Pract.* 35 (1), 165–184.
- Welter, F., Smallbone, S., 2008. Women's entrepreneurship from an institutional perspective: the case of Uzbekistan. *Int. Entrep. Manag. J.* 4 (4), 505–520.
- Williams, N., Vorley, T., 2015. Institutional asymmetry: how formal and informal institutions affect entrepreneurship in Bulgaria. *Int. Small Bus. J.* 33 (8), 840–861.
- Yin, R.K., 2009. Case study research: design and methods, essential guide to qualitative methods in organizational research. In: *Applied Social Research Methods Series*. vol. 219.
- Zahra, S., Wright, M., 2011. Entrepreneurship's next act. *Acad. Manag. Perspect.* November, 67–83.