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Indicative findings from a study of information behaviour in digital business ideation: insights from the developing world

Suraj Ibrahim, Rita Marcella and Alan MacLennan

Introduction. Though a wealth of information behaviour research has been undertaken in various contexts over the years, less has been done on entrepreneurship. In particular, there is a lack of literature around the ideation component in the early stages of business formation. This study seeks to address the theoretical and empirical gap within this research stream, bringing together information, innovation, and creativity theory, as lenses through which to explore the phenomenon.
Method. Twelve semi-structured interviews were conducted with business founders. Participants operated in a variety of segments of the digital technology spectrum.
Analysis. Critical Realism and Grounded Theory were used as theoretical and practical data techniques, using abduction in the theoretical redescription of concepts (codes) identified in the empirical data, and retroduction to identify the necessary contextual conditions for a particular causal mechanism to take effect and result in the observed empirical trends.
Results. Indicative results show several societal and personal factors play a role in shaping the information behaviour of digital entrepreneurs. These factors include but are not limited to poverty, parenting, and unequal power between mentors and mentees.
Conclusions. While this research project is ongoing, early findings emerge in previously unexplored aspects of information behaviour such as the importance of reading passion and early exposure to digital devices amongst digital entrepreneurs.

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Introduction

What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention, and a need to allocate that attention efficiently among the overabundance of information sources that might consume it. (Simon, 1971 , n.p)

People use and seek information in their daily lives to achieve mundane and strategic goals, especially in today's information era (Case and Given, 2016, Gates, 1999, Kraus, et al., 2018). The reasons for information seeking and use include the urge to manage curiosity, satisfy obsession, safety and health, and for creative purposes such as invention, innovation, and entrepreneurship (Anderson and Nichols, 2016; Case and Given 2016; Chaudhry, 2016; Coney and Serna, 1995; Johnson 1997). The varying levels of stakes relating to information seeking and use make information behaviour (IB) an important object of scientific research in Business, Management, Innovation and Entrepreneurial Studies (Du Plessis, 2007; Karim and Hussein, 2008; Mosha, et al., 2013; Widen-Wulff2000). The current research explores the information behaviour of digital entrepreneurs, specifically in the ideation component of a business start-up. Information behaviour in this context accords with the definition of Wilson (1999, 249), who argues that, by *'information behaviour is meant those activities a person may engage in when identifying his or her own needs for information, searching such information in any way, and using or transferring that information'* Wilson (2005, 49) added that *'information behaviour is only observable in the information activities seeking, searching, use and transfer.* ' This implies that information behaviour is primarily a mental process that can only be practically observed in the respective information activities.

Technology is reshaping and redefining entrepreneurial practice and the development of entrepreneurship ideas (Fisher and Julien, 2009; Kraus, et al., 2018; Nambisan 2017; Nambisan, Siegel and Kenney, 2018; Nambisan, et al., 2019). According to Nambisan, Siegel and Kenney (2018), technology, particularly information technology, has proven to be the most vital tool for business and entrepreneurship in today's digital ecosystem. The evidence of information technology's usefulness has fuelled its widespread adoption and subsequent reliance amongst digital entrepreneurs, eventuating in a sub-sector called digital entrepreneurship (Davidson and Vaast, 2010).

Several theorists have evolved definitions of digital entrepreneurship. Le Dinh, et al. (2018) define digital entrepreneurship as reconciling traditional entrepreneurship with a new way of developing and doing business in the digital age. Davidson and Vaast (2010) see digital entrepreneurship as exploiting new opportunities posed by social media and Internet innovations. Digital entrepreneurship is defined by Guthrie (22014) as the creation of an undertaking to produce and generate revenue from digital products through electronic networks. Sussan and Acs (2017) view digital entrepreneurship as business activities that require digital interaction, but which may not be digital in themselves. These diverse meanings have created a lack of clarity in the conceptualisation and definition of digital entrepreneurship (Zhao and Collier, 2016). However, recent efforts are beginning to bring greater clarity. For example, Giones and Brem (2017) observed a varied degree of interrelationship between technology and business to develop a typology to represent three scenarios. They use three gradations for different combinations of business and technology: technology entrepreneurship, digital technology entrepreneurship, and digital entrepreneurship. The present study defines digital entrepreneurship as business ventures that leverage information technology and related technologies to deliver content or service offerings digitally.

Problem statement

The research aims to investigate the information behaviour of digital entrepreneurs, specifically in the ideation component of a business start-up. Start-up success is considered important in healthy economies and yet 'the failure rate of start-up firms seems to remain high over time' (Pena 2002, p. 180). It is, therefore, pertinent that the role of information at this crucial stage be investigated. The research project has been conducted via an empirical investigation into the totality of the information endeavour pertaining to the gestation, challenges, and the identification of solutions in the start-up creation process. Taking as a basis Bhave's (1994) ideation-focused model for start-up creation, this research project attempts to answer the following questions:

1. What is the nature of the information environment for start-up entrepreneurs?
2. What are the barriers that hinder the search for and access to information sources?
3. How has acquired information supported the start-up businesses?
4. What are the feelings associated with the finding, failure to find or lack of information?
5. How can any barriers identified be overcome?

In terms of research into digital entrepreneurship Anim-Yeboah, et al. (2020, p. 200) concludes that *'a major gap identified, is the limited use of theoretical and conceptual frameworks that would bring the concept of digital entrepreneurship up to par with major areas of academic inquiry in information science research'.*

Literature review

Information is an essential input at all levels of a business cycle, arguably most importantly in the business's early stages (Johannessen and Kolvereid, 1994). Notwithstanding the apparent importance of businesses to nations' economies, the literature survey only returns a handful of examples of research conducted at the intersection of information science and businesses or, more specifically, information behaviour within entrepreneurship (Leslie, 2009). In particular, there seem to have been very few studies over the past ten years, and most of the recent research comes from developing countries, especially in sub-Saharan Africa (Chiware and Dick, 2008; Ikoja-Odongo and Ocholla, 2003, Jorosi, 2006; Mooko and Aina, 2007; Nankinga, 2019; Okello-Obura, et al., 2008; Shokane, 2002; Underwood, 2009).

Entrepreneurs' information behaviour: literature from the developing world

The first empirical sub-Saharan study into entrepreneurs' information use identified is the work by Duncombe and Reeks (1999), who assess how information and communication technologies (ICT) aided small enterprise development in Botswana. Jorosi (2006) and Mooko and Aina (2007) examine managers' and artisans' information seeking and information needs. Managers are reported to have acute information need and tend to utilise both formal and informal sources of information. In contrast, artisans are less likely to use formal sources of information, potentially as a result of lower levels of educational attainment. Chiware and Dick (2008) investigated the information needs, information seeking patterns, and the nature of business information services available to small, medium, and micro enterprises (SMMEs) in Namibia, reporting a wide range of information used by managers for daily business operations. In contrast to the findings by Jorosi (2006), participants in the Chiware and Dick study (2008) indicate a preference for informal channels. This is surprising given that both studies' participants have identical characteristics.

Several related but separate studies by Ikoja-Odongo and Ocholla (2004) and Nankinga (2019) provide insights into the Ugandan informal economic sector. Ikoja-Odongo and Ocholla interviewed over six hundred (600) small business owners and a smaller number of market participants to investigate the types of information obtained by entrepreneurs, the techniques used to search for information, and the sources, channels, and information systems used by them. Consistent in their finding is that low skilled business owners prefer to use informal or interpersonal information channels. However, they also point to reasonably low literacy levels among their respondents that strongly influence their preferences for particular sources of information, always a consideration when considering African research. The Tanzanian study by Mosha, Siyao and Ochieng (2013) also agrees with the submission oflkoja-Odongo and Ocholla (2003).

The information behaviour of women entrepreneurs in rural areas in Nigeria and Uganda was investigated by Abdulhamid and Alhassan (2012) and Nankinga (2019). Both studies have found that women face difficulties in meeting their information needs, but do not discuss the causal factors behind these difficulties. Gebremichael and Jackson (2006) argue that the lack of digital inclusivity in the region exacerbates the problem of information poverty.

There is little information behaviour research into business conducted in Asian countries (Wang and Guo, 2015). Most of the research from this region reaffirmed the position of African studies on information behaviour. On the other hand, literature from developed countries has also been reported (see, for example, Johannessen and Kolvereid, 1994; Chalmers,1995; Rickards, et al., 1989; Bouthillier, 2003 and Wallbutton, 2004).

Ideation or business creation and information behaviour

Despite the work noted above, no literature is found on information behaviour in relation to ideation from the African context. A survey of the literature only found a handful of examples of scholarship that deal with ideation from an information perspective: see for example, (Ames and Runco, 2005; Kerne, et al., 2014; Laing and Masoodian, 2015; Makri, et al., 2019). However, only Leslie (2009) and Johannessen and

Kolvereid (1994) have carried out specific information behaviour research into business ideation. Together with the present research, these studies are considered a family of ideation research because they relate to business gestation from a wider perspective. The current research builds on these two key papers. Although some studies, such as Leslie (2009), Johannessen, and Kolvereid (1994) look at the birth or genesis of ideas, none focus on the interaction with information as part of ideation, from idea generation to business realisation. Understanding the emerging process is the core goal of the present study, through tracing digital entrepreneurship idea generation back to socially lived experiences. This is important given the large but still increasing number of start-up failures (see, for example, Kalyanasundaram, 2018, Aminova and Marchi, 2021). The research endeavour is timely in that it fills an intellectual and practical vacuum.

Method

This research project investigates the information behaviour of digital entrepreneurs during the ideation process of starting up a business. A Critical Realist philosophy has been adopted, as the complex nature of ideation both from the cognitive and social points of view makes this a complex phenomenon to investigate. Critical Realism or, as Bhaskar (2016) called it, enlightened common sense, is 'a much more internally consistent and philosophically developed framework for those who have decided to follow the "realist turn" away from positivism and constructivism' (Gorski, 2013, p. 659).

The critical realist approach helps to provide empirically supported causal explanations, rather than predictions, of how and why events such as digital ideation occur. It is a viable alternative paradigm and has been increasingly applied in various fields of social science, information behaviour and entrepreneurship
(Fletcher, 2017; Hu, 2018; Wikgren, 2005; Wynn Jr and Williams, 2012). As an approach which is 'well suited to developing causal explanations and explaining competing theories of complex social events' (Hu, 2018, p. 16), critical realism's search for causation helps researchers explain social events and suggest practical policy recommendations to address social problems (Fletcher, 2017). Furthermore, critical realism allows the researcher to acknowledge the role and impact of agency and social structure.

Critical realism also brought methodological flexibility through its stratified ontology and epistemological relativism, allowing different researchers to develop alternative explanations for the same social event. As the current research explores a research topic that has been typically problematised, where the developing world is more usually regarded as a challenge rather than an opportunity, alternative explanations from the evidence enable new perspectives to be gained.

Two data analysis modes, abduction and retroduction, are used. Abduction was undertaken after coding the research's main empirical findings (demi-regularities). This process is known as theoretical redescription - in which empirical data are redescribed using theoretical concepts. For example, an excerpt from the transcription which is coded as: 'useful information is that which is defragmented', is redescribed as information consolidation, denoting a higher level of theoretical engagement beyond the rich description of the empirical entities, 'but with an acknowledgement that the chosen theory is fallible' (Fletcher, 2017). The second data technique is retroduction, which focuses on causal mechanisms and conditions. Retroduction is another form of inference that aims to identify the necessary contextual conditions for a particular causal mechanism to take effect and result in the observed empirical trends (Fletcher, 2017). The causal mechanism and conditions identified include social structures such as deprivation, victimhood and poverty, to mention a few. This research recruited participants from Nigeria, in the technology industry sector, who have founded or co-founded a company.

CR has a highly open and flexible approach to data collection and holds that methodological choices should 'depend on the nature of the object of study and what one wants to learn about it' (Sayer, 2000, p. 19). The authors have adopted one of the interviewing formats developed by Turner III (2010, p.755), which allowed the participants to express themselves freely and flexibly; however, it also allows pre-determined questions so as '... to ensure that the same general areas of information are collected from each interviewee'. The interviews conducted should appear to be a natural conversation rather than a series of checklist questions. The naturalistic conversation allows the researcher to maintain control of the interview session and gives the interviewees a comfortable atmosphere to express themselves freely. Pilot interviews enabled refinement of the interview schedule. The results to date indicate that participants spoke freely and at length, providing rich data.

The research participants were recruited using the snowball sampling technique. The initial participants were identified with help from a government agency, the Nigerian office for ICT, Innovation and Entrepreneurship. Each interviewer was asked if they could identify other potential participants, hence enabling the snowballing technique. The interviews were conducted online (via Teams and Zoom), and some over the telephone. The interviews were subsequently translated (where necessary) and transcribed. As most of interviews were conducted in the native language, Hausa, translation was required. Adherence to due diligence was observed to ensure that meaning from the source language was carefully converted to the target language (English), using the method and procedure outlined by Ordudari (2007) and Erkut (2010). This caution was necessary given the fact that culture-specific concepts such as idioms, proverbs and allusions are involved, and it helps to minimise the dangers of automated translation

Discussion of results

The information behaviour of digital entrepreneurs from Nigeria was investigated. A number of emergent information behaviour themes relating to ideation and digital start-up has been identified. These include: *(i) parental and societal, (ii) creativity/innovation, (iii) information behaviour, (iv) mentorship/partnership, and (v) education/motivation.* These themes represent the most significant indicative findings from initial interview data qualitatively analysed. It is believed the complete findings from the investigation will add further themes and greater depth of understanding of each.

Parental and societal influences

The decision to pursue a career in entrepreneurship is a complex one that is influenced by personal and family factors (Thompson, et al., 2013). Childhood appears to be highly influential, in the current research. The parents' experience in entrepreneurship, particularly that of the mother, plays a significant role in the children's entrepreneurship journeys. The mother appears to be the most important figure, a role model, in providing social, psychological, and entrepreneurial support to the child. As one of the entrepreneurs puts it, *'[my mother} always had a business that we were all part of growing up'.* The role-modelling of the mother became apparent, perhaps as a result of the single-parenting situations most of the entrepreneurs had experienced, with associated impact on challenging socio-economic conditions.

Many participants described facing childhood deprivation and exclusion. Getting shelter and food was a struggle growing up; some described the situation as economically harsh and disheartening. This is surprising since the literature on entrepreneurship choice has shown a positive linear relationship between household wealth and a career in entrepreneurship (Thompson, et al., 2013). However, later studies have countered that position, to suggest that becoming a business owner is a nonlinear function of wealth (Hurst and Lusardi, 2004).

A consistent finding of the present research is the impact of a mother in a number of ways, including the ways in which mothers are found to shape the minds of their wards, such as providing them with specific guidance and perspective about entrepreneurial life. One entrepreneur described: 'my dream has always been becoming a farmer. So, *[the digital entrepreneurship] I have found myself in was my mum's idea. I never wanted to be like this.* ' This also concurs with Lindquist, et al.'s view (2015) that parental entrepreneurship increases the probability of children's entrepreneurship. The determination of these African mothers defies both economic and social odds, and counters existing parenting literature, especially those studies that linked parental failings to poor financial well-being (Russell, Harris, et al., 2008. This is to say, it may be uncommon to encounter entrepreneurs whose parents, particularly the mother, did not pursue entrepreneurship.

Creativity and innovation

Understanding creativity or how creative ideas are formed is traced to Mednick's (1962) work more than sixty years ago. Creative people have flatter associative hierarchies - a form by which information or data is stored in the memory. He argues that for any given concept (event, object, or experience), there is a set of associations that can be arranged in the order of their associative strength and, as a consequence, a person can fluently retrieve remote associative elements, which can be combined to form creative ideas. Mednick's findings did not connect creative capacity to particular information behaviour, although they did highlight the

role of cognitive information processing in creativity. Benedek and Neubauer (2013) expand on the work by Mednick to show the difference between high and low creative individuals (Kennet, et al., 2018). Benedek and Neubauer (2013) claim that both high and low creative people show the same general organisation of associative memory; however, creative people follow a common path to uncommon thought, but they do so at a much higher speed. Findings from the empirical data reveal similar noetic or cognitive evidence from a participant: *'information goes beyond just the substance of knowing, to unpronounced words in our mind which trigger actions to pursue a goal'.* This participant believes people can 'enhance their information practices' by verbalising their thought or thinking processes. Almost all the models of creativity and ideation used in business, entrepreneurship and innovation are underpinned by psychological theories and explanations, where for example, Cognitive Framework, Pattern Recognition, Divergent Thinking and Convergent Thinking are applied (Akgiin, et al., 2003; Baron, 2007; Fabritius, 1998; Paletz and Schunn, 201 O; Xu, 2011). Key elements of these creativity models, especially pattern recognition, are mental alertness and ability to discern and analyse macro situations (Baron, 2006). Elements of this model can be found in participants' accounts. Two of the participants encapsulate these analytical skills: *'I stayed keen and observant and eventually I spotted an opportunity'.* Another believes he is *'constantly on look for a short-lived business opportunity'.*

Cognitive models of creativity typically shed light on where and how new ideas emerge. This was echoed in the majority of the participants' comments. According to the findings, the generation of an idea might be either externally or internally driven. Internally generated entrepreneurship ideas are discovered in persons with a large, diverse knowledge base, and other ideas are generated as a result of a constellation of lived experiences. The comments of participants provide evidence of their own understanding of how ideas emerge:

> 'I have tried other areas of digital technology in the past, but how I come about the idea of digital art is not very apparent to me. However, I acknowledge that colourful street advertisements and the printer repair job I had in the past have influenced my thinking in that regard'.

The selection of a business idea might be the culmination of current and past experience. Several interviewees also reported that their academic qualifications were not reflected in the entrepreneurship path they picked. Another significant finding from the data is the diversity of the knowledge base among participants, often as result of a shift in discipline. Literature has found a relationship between knowledge base diversity and opportunity creation or innovation at the organisational and group level (Bishop, 2019; Micheli, et al., 2020). Bishop, for example, (2019, p.20) argues that *'unrelated knowledge diversity is particularly important in stimulating new entrepreneurial opportunities'.*

Group opportunity creation falls within the theme of co-ideation: *'incubators are invaluable for developing the Nigerian start-up ecosystem'.* Another participant believes his ideas were shaped better because of the like-minded community to which he belongs. Co-ideation, which is a manifestation of symbolic interactionism, is an alternative idea and opportunity development process. *'I could have done better if I had a wider and wise network of people. You know, they say we are all a function of the people we choose to keep around',* says another.

Some responses from the participants point towards entrepreneurial learning, and spoke about nurturing appropriate attitudes, skilling up and amassing the right knowledge to tum the creative ideas into action (Hafeez, et al., 2018; Sevak and Baker, 2014). *'One of the things I did while I was in the university was called ABUDevs - a community of students and some few lecturers who come together to learn',* recalled one of the participants. Interest and practice-oriented groups are known to be a hothouse for entrepreneurial activities geared towards members' benefit (Howorth, et al., 2012; Phelps, Heidl, et al., 2012). Thus, knowledge networks have power in encouraging and supporting innovation. The present research has also provided an intriguing insight into the personality traits of digital entrepreneurs. Their involvement with technology, particularly the internet and search engines, is remarkable. Participants demonstrate reliance on the internet as well as reporting mastery in searching for information on the web. The internet, with its apparently unlimited resources and poor specificity in recall, provides searchers with pointers to a rich variety of information they might never have looked for if they remained within a restricted and potentially limited disciplinary domain. Other notable self-reported traits include showing strong conviction, resilience, optimism, and unwavering ambition.

A theory is emerging in terms of the importance of interdisciplinarity - looking across diverse disciplines - for the entrepreneur's ideation. This finding is also supported by the frequency of start-up entrepreneurs engaging in knowledge for which they have not been educated and pre-prepared. Has this been enabled by the internet and new ways of interacting with information, in a different approach to the traditional organisation of information resources, via cataloguing, indexing, classification and shelving subject arrangement? A more free-form and spontaneous means of accessing information has advantages that the traditional information curator might never have imagined.

Information behaviour

The research results reveal insights into a number of themes in relation to entrepreneurs' information behaviour during start-up creation. These include, but are not limited to, the role of information in the process of developing the business idea or ideation; and participants' approaches to searching, accessing, processing, filtering, and utilising information.

The findings highlight the importance of information to ideation and the accompanying start-up, emphasising its significance in the overall business start-up mix: *'believing in the efficacy of information creates better ideas',* says one of the participants. Other participant perspectives on the importance of information portray it not only as a tool, but as a resource that supports every aspect of creative endeavour. Information is a resource which the startup entrepreneur draws on and/or a business product that the entrepreneur commercialises. The literature is generally in agreement about the positive role of information to business and ideation (Ames and Runco, 2005; Gates, 1999; Head, et al., 1995; Marcella and Illingworth, 2012; Marcella, et al., 1996; Runco, 2010).

Current research also explores in more depth some of the ways in which individual users interact with information in high risk and fast-changing contexts. Participants faced the greatest difficulties in dealing with information overload. Their capacity to process and utilise information is acknowledged by some participants to be limited, in that they lack the ability, in particular, to filter, digest, and apply information. Their absorption of information could not match information influx, given that digital space is prone to becoming, or is already, overloaded with information in relation to business-critical needs. *'Information overload cannot be avoided',* is a view shared by many participants; this also accords with Sweeny, et al's. view (2010), that almost everyone engages in information avoidance. In light of this apparent incapability of digital entrepreneurs, filtering becomes for many the only logical response (Hanani, et al., 2001), while some participants felt information avoidance was not an effective *'solution to overload'.* However, for other participants, business-related information avoidance falls within the active category Narayan, Case and Edwards (2011) described. Findings discovered two types of cognitive filtering approaches engaged in by digital entrepreneurs, namely:(!) *'rational'* - an intellectually driven reasoning process and (2) *'visceral'* - instinctive or affective filtering. The findings also reveal reliability and timeliness to be commonly applied criteria. Participants were aware that filtering techniques pose dangers and require the searcher to be prepared to take the risk that a valuable piece of information may be missed. The information user must be aware of this risk when proceeding with their research.

Another important finding from this research pertains to information challenges preceding the information overload phenomenon. Although information is described as *free'* and *'universal',* a consistent barrier to access for participants is linked to the price of resources and to the economic standing of the information seeker. Entrepreneurs interviewed believed that access to information can be substantially improved as a result of one's socio-economic power and social standing. Despite their recognised informality, face to face sources remain important for most participants. Further interviews will probe the ways in which these factors impact information interchange, such as whether sharing the culture and status of the information holders increases the likelihood of information sharing in informal situations.

The most common barriers to information access in the digital realm are infrastructural and linguistic. Poor internet connectivity and electricity shortages, for example, have a very serious impact on electronic searching by entrepreneurs. Linguistic shortcomings may result in poor keyword choice during searches. These limitations will have a negative cascading effect on the entire information-searching process. This means that the seeker may be unable to form the necessary core knowledge/information for the query procedure to progress. This linguistic struggle to express the search query compounds Belkin's (1980) anomalous state of knowledge, ASK, and Taylor's (1962) concept of visceral need, as a linguistically

inexpressible discontent. However, this difficulty did not apply to other information-seeking strategies used by the participants as they were not tightly configured, structured information-seeking procedures. They were emergent, spontaneous, and adaptable in nature. One interviewee described *'situations where it becomes apparent that particular information could be difficult to obtain, very little information available can be scavenged.* 'Another described information seeking as a form of expanded, unsystematic, and unorganised information search. This is similar to the activity Pirolli and Card (1999) and Li, et al. (2017) described as foraging or rummaging, where apparently trivial pieces of unrelated information can be consolidated into a useful and meaningful whole.

It is also worth noting the usefulness of information retrieval tools in assisting in the reduction of information overload. However, these digitally supported retrieval techniques, which enable filtering and sieving functions (such as date or publication type filters), are also limiting factors in that they decrease the amount of information available for digestion and will reduce the user's capacity to survey a subject fully.

The results show that some participants are aware that information assimilation is a skill that can be honed via practice. There was also an awareness that ability to filter depended on other associated skills and attitudes, such as literacy and a willingness to read. For example, one of the respondents spoke of the extent to which his love of reading had helped him deal with information overload: *'were it not for my passion for reading, I'd probably have a hard time combing through all the information'.*

The participants engaged in a variety of information behaviours, albeit it is unclear if they were consciously aware of such behaviours. Recognizing their own information behaviour will enable users to capitalize on aspects that provide the most informational value and will minimise the impact of other counterproductive behaviours.

Mentorship and Partnership

Leaming by doing or experiential learning processes may be one of the dominant ways in which entrepreneurship is learned. However, alternate routes are followed by less experienced or rather cautious entrepreneurs to flatten their learning curve and avoid costly mistakes (Hiigg and Politis 2014). One form of the assisted route is mentorship. Mentorship features prominently in digital entrepreneurship and is impacted by a variety of factors. The relative maturity or state of technology as well as inaccessibility to digital technology in the developing countries are the significant factors. For example, even with the successes recorded particularly during COVID, in which about 800 million people gained access to the digital world, still an estimated 96% of the 2.9 billion offline people live in emerging nations, a group to which Nigeria and African countries belong. Many of these digitally excluded people face tremendous difficulties like poverty, illiteracy, restricted access to energy, and a lack of digital skills and awareness, according to the International Telecommunications Union (ITU, 2021). An important segment of ITU's report that relates to the present research is how digital skills are negatively impacted due to limited access to digital tools. This might be why mentorship is particularly important in developing countries.

Among the participants, one felt:

> '.. .learning about technology it was very hard to look up to somebody locally ... to see somebody who was doing stuff here in Nigeria or even in Africa because a lot of the people doing things were mostly in the Western world'.

As much as mentorship is critical to entrepreneurship in developing countries, therefore it is logical to accept that tech start-ups are hard to build in developing counties because of the lack of role models and mentors. Another finding from the present research could further explain the difficulty of accessing mentors. This is the issue of trust. Some participants allude to that some mentors are reluctant to offer leadership and training for fear that mentees will steal their ideas and eventually outperform them in the market. This form of anxiety can legitimately be excused, given the low entry requirement for digital entrepreneurship (Martinez, et al., 2018; Nambisan, et al., 2018; Nambisan, et al., 2019;). Findings from the present studies identified three modes of mentorship tenable within the developing country context: *(1) global mentorship, (2) passive mentorship and (3) active mentorship.*

It is important to acknowledge that access to digital tools is the hallmark of digital entrepreneurship, given that it is an essential prerequisite for participation. Progress towards more digital and financial inclusivity will empower early career entrepreneurs to participate in global mentorship programs and virtual practice communities. This development will amplify the demand for and access to mentorship and may place mentors in positions of unequal power and authority, with increased risk of abuse.

Motivation and Education

Entrepreneurship drives an individual to exert additional effort and commitment to continue on an existing path or start a new enterprise. Motivation for entrepreneurship is predominantly linked to the need for the achievement of personal goals and the desire for financial independence (Estay, et al., 2013;). The present study has found that other previously unrecorded dimensions to entrepreneurship motivation sit around less apparently direct personal motivators, such as poverty and exploitation, which triggered a chain of positive actions resulting in positive ideation and thinking. Such painful experiences have turned out to be significant moments of entrepreneurship: *'that period was tremendously a learning and turning point for me - a combination of sad and good memories there',* says one of the participants.

Another factor that was identified to have shaped and changed entrepreneurs' perspectives is access to and usage of libraries. In such a context, a library and literature more generally are considered to be information resources for ideation and the broadening of knowledge: *'I found a book on my classroom desk called Rich Dad Poor Dad. That is where it all began'.* Information resources here denotes information and knowledge provision repositories. This finding also underscores the role of education-basic literacy, including reading and writing, as a precursory requirement. Other game changers in the life of the entrepreneurs can be traced to their nascence.

Childhood interests/passions translate into very important reference points for business ideas. This suggests that some business ideas might have been preformed subconsciously, which only become clear much later. The importance and relationship between education and entrepreneurship are well documented elsewhere (Allen and Fifield, 1999; Kassean, et al., 2015; Sanchez, 2013; Weaver, et al., 2006;). Entrepreneurs may not be consciously aware of the motivating factors of their journey given that such factors may be societally and socially enforced in an embedded manner.

Conclusion

The information behaviour of digital entrepreneurs during ideation has been explored. Findings from the research project reveal interesting and important insights regarding ideation from the digital entrepreneurship perspective. The most intriguing discovery relates to how ideation is heavily impacted by experiential factors, often by the role of the mother through the child's upbringing. Naturalistically and passively, mothers are one of the earliest and the most important mentorship figures for these participants and maternal impact remains throughout the participants' lives. The traditionally accepted dominance of the father figure is being challenged by these results and is particularly important given the high incidence of single parent family units in the study. The role of the mother is both conducive and inhibitive. This duality of the role is as a result of the culturally reinforced influence of mothers. The role of the mother as a preferred information source in all contexts is one which merits further exploration.

The research findings concur with the literature reporting information avoidance to be a common behaviour among digital entrepreneurs and these results show that it is often done purposively. This intentional avoidance of information is a significant characteristic of persons working in business-related contexts, primarily to avoid confirming their thoughts or suspicions about impending loss or risks and to avoid anxiety. The implications of this behaviour for business start-up success is significant in terms of how we think about business information literacy programmes. A final point proving worthy of further exploration is that of the positive relationship between digital entrepreneurs and loose and unstructured sources of information.

Another discovery worth noting is how negative social and economic factors such as exclusion, poverty, and exploitation have become significant turning points for digital entrepreneurs, sparking business creativity and ideation. Those breakthrough moments are explicable, perhaps even expected, if the personality traits of the entrepreneurs, such as perseverance, tenacity, and mental alertness, are taken into account. Ideation

behaviours can be said to be importantly shaped by externally induced factors (such as mentors and adversaries) which often and subconsciously affect participants' behaviours. Mentorship is found to be a significant factor that flattens the learning curve and abolishes the need for reinventing the wheel by upcoming entrepreneurs. Other important factors for enhancing start-ups are the roles of practice communities and having an alternative perspective of considering adversaries as learning opportunities. These will undoubtedly reduce failures and accelerate start-up creations.

Considering the research project is ongoing, other themes are likely yet to be identified and discussed. Thus, it is impossible to detail all the themes identified in the empirical data available, within the scope of this paper. This might have hindered an all-round discussion of the overall findings. The fact that the recruitment of the participants is from a country- and culture-specific background means that generalisation should be made with great caution. However, it remains an exploration of the culture of the entrepreneurs in Nigeria, which is categorised as developing. It is anticipated that future conclusive findings will contain both results of relevance to this particular culture and state of economic sophistication as well as to the wider entrepreneurial population.

The research outcome has addressed an empirical and theoretical gap which has been little examined from either the information science or management studies perspectives. This has contributed to the discovery of important insights from the information behaviour perspective. Further exploration of these continues through analysis and additional interviews.

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