Exploring entrepreneurs' business-related social media typologies: a latent class analysis approach


Link to publication record in Ulster University Research Portal

Published in:
International Journal of Entrepreneurial Behaviour and Research

Publication Status:
Published online: 28/03/2022

DOI:
10.1108/IJEBR-10-2020-0715

Document Version
Author Accepted version

General rights
Copyright for the publications made accessible via Ulster University’s Research Portal is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy
The Research Portal is Ulster University’s institutional repository that provides access to Ulster’s research outputs. Every effort has been made to ensure that content in the Research Portal does not infringe any person’s rights, or applicable UK laws. If you discover content in the Research Portal that you believe breaches copyright or violates any law, please contact pure-support@ulster.ac.uk.
Exploring Entrepreneurs Business Related Social Media Typologies:
A Latent Class Analysis Approach

Abstract

Purpose – This paper aims to present typologies of entrepreneurs’ using their engagement and use of social media (SM) for business purposes as a means of categorisation. Based on this categorisation four types of entrepreneurs are proposed: the Hopefuls, the Assureds, the Opportunists and the Passengers. The emergent typology should serve as the basis for further thought and empiricism.

Design/methodology/approach – A two-phase quantitative opportunistic sampling approach was employed. First, entrepreneurial experts (n = 8) structured interviews informed the survey design. Secondly an online survey, based on Theory of Planned Behaviour (TPB), was completed with entrepreneurs at business incubation centres in Ireland. Latent Class Analysis (LCA) identified a number of entrepreneur-typologies using participants (n = 124) business-related social media activities. Differences in entrepreneurial types were explained using the TPB, trust, security and demographic variables.

Findings – Results indicate that there are four distinct types of entrepreneurs based on their business-related social media activities. Once the typology was created, comparisons were conducted between each type based on the psychological drivers of the Theory of Planned Behaviour. Trend differences were identified between the distinct typologies.

Originality – The value of this research is that it proposes a typology of entrepreneurs categorised based on social media engagement and use. The typology can be used to identify and compare the differences between entrepreneurs based on their perceptions regarding social media, their abilities related to social media and the support they need in relation to this. This research is novel in that
it addresses calls to segment the increasingly diverse and complex entrepreneurial population using the pillars of social and digital technology as a focus. It also provides a framework for examination and replication in other geographic and entrepreneurial settings.

**Paper Type:** Research paper

**Keywords** – Entrepreneurs, Typology, Latent Class Analysis, Social Media, Theory of Planned Behaviour.
Introduction

Nambisan (2017) explained that existing research has neglected the role of digital technologies in entrepreneurial pursuits. Studying new industries, technological innovations, product innovations and emergent markets is a significant challenge. Rapid advances in innovative technologies, new business models and the fourth industrial revolution require new people driving forward a culture of entrepreneurship (Srinivasan and Venkatraman, 2018). It is impossible to ignore the rapid acceleration of digital technologies that are reshaping markets and society globally (Gomber and Koch, 2017). Research suggests that entrepreneurs who cannot, or do not, engage with technology related business and marketing activities, lose their competitive advantage (Durkin et al., 2013). They may also provide a reduced customer experience (Sashi, 2012). The availability of appropriate skills for utilising technologies, specifically social media platforms, is therefore an important condition for competitiveness and innovation among entrepreneurs and small enterprises (Al Sharji et al., 2018).

Context – Entrepreneurship in Ireland

This research is set against the backdrop of the Irish entrepreneurial landscape which is rapidly advancing and growing driven by various accelerants including public policy, financial incentives and the proliferation of training and mentoring schemes. Entrepreneurship in Ireland has witnessed highs and lows across many decades with the lowest level of economic performance in Western Europe in the twentieth century followed by peaks during the Celtic Tiger years and beyond, (Lee, 1989; O’Gorman, 2015). Small businesses account for 70.1% of total employment in the ‘non-financial business economy’, in Ireland.
As Figure 1 shows Ireland saw a growth of entrepreneurs in 2019 of 36,300. In fact, the Global Entrepreneurship Monitor (2019) reported Ireland as the eighth most entrepreneurial country globally and the fourth overall in Europe. However, Statista (2021) suggests that the number of small businesses in Ireland decreased from 2020 to 2021 to 254,228 representing a 3.8% decrease.

Indeed, during this period €48 million was invested by the Irish government in 125 new start-ups, representing a doubling of government support, in High Potential Start-Ups (HPSU), (Enterprise Ireland, 2021a).

There is a strong small business support ecosystem in Ireland including Local Enterprise Offices and over 170 government supports ranging from finance to management development to mentoring and trade support, (Department of Enterprise, 2021). One form of support for entrepreneurial activity in Ireland is Business Incubation Centres (BICs) for new enterprise development and growth; a trend inspired across Europe by the European Commission as “part of the modern entrepreneurial ecosystem”, (Mubarak Al-Mubaraki and Busler, 2017; Hausberg and Korreck, 2020: pp. 152). A BIC provides support for start-up businesses which can include office accommodation and professional services, business mentoring and network growth, (Bøllingtoft and Ulhøi; 2005; Enterprise Ireland, 2021). There are approximately 500 businesses in incubation across Ireland, mainly funded by Enterprise Ireland, in thirty BICs, (OECD, 2019). Al-Mubaraki summarised BIC objectives as economic growth, technology transfer and commercialisation, fostering entrepreneurship and job creation. However, they noted that BICs are not without challenges especially concerning sustainability of programs. Indeed, Struwig and Meru (2011) conclude that incubation centres cannot protect and nurture businesses from all challenges.
particularly the external business environment; they have a more positive impact on controllable, internal factors. (For a fuller discussion of Business Incubators refer to Al-Mubaraki and Busler (2017) and Hausberg and Korreck (2020)). The entrepreneurs in these BICs provide a fertile context for the study of entrepreneurs and social media engagement as they are considered to be High Potential Start-Up firms in terms of growth and/or export possibilities similar to Mack et al (2017) who examined business incubation entrepreneurs in the USA and their use of ICT and social media, (Enterprise Ireland, 2021).

Social media and entrepreneurs

Coupled with this is the emergence of new digital technologies influencing entrepreneurial processes and outcomes. SMEs have been adopting ICT innovations for many years; a landscape which has been widely documented, (OECD, 2004; Tan et al, 2010; Higón, 2012; Columbo et al, 2013; Apulu et al, 2013; Giotopoulos et al, 2017; Ab Wahab et al, 2020). One such technology reflecting both the digital and social landscape is social media which is often referred to as a ‘market-oriented ICT’, (Lucchetti and Sterlacchini, 2004). McCann and Barlow (2015) define social media as “generating content and connecting with people through a many-to-many” platform online by allowing interaction, participation and collaboration between businesses and customers”, (pp. 273). The rate of adoption and use varies across organisations and industries, (Tan et al, 2010). Electric Ireland (2016) reported that 66% of businesses were enthusiastic about social media use but 34% did not use it at all due to concerns about wasting time and resources. Indeed businesses using social media in Ireland increased from 50% in 2016 to 60% in 2019 and 75% by 2020 with Irish businesses identified amongst the most progressive globally regarding social media use, (Electric Ireland, 2016; Irish Times, 2020). It would therefore appear that social
media is used in varying ways, and to varying degrees, but little is known beyond this. (See Beier and Wagner (2016) for an overview of social media business-related use). Consequently, this has raised several important research questions at the intersection of digital technologies and entrepreneurship that call for careful consideration (Nambisan et al., 2017). In fact, calls to reflect on digitised approaches and practices including social media in SMEs are acknowledged, (McCann and Barlow, 2015; Rajahonka and Villman, 2019; Sharafizad, 2016; McAdam et al, 2019). Despite this, there is only limited research examining how entrepreneurs engage with these digital technologies (Sashi, 2012; Scarmozzino et al., 2017; Sussan and Acs, 2017). Therefore, this research proposes typologies of entrepreneurs based on their business-related social media perceptions, engagement and activities. Specifically, we seek to understand how entrepreneurs’ attitudes, personal abilities and significant others can influence social media engagement. The two main exploratory research questions addressed in this paper are:

**RQ 1**: Are there different latent entrepreneurial typologies explaining business-related social media activities and engagement?

**RQ 2**: Do possible differences exist between these entrepreneurial business-related social media typologies, explained by decision-making, personal abilities, attitudes and the influence of other individuals?

The paper continues by examining the issues associated with entrepreneurs and technology, with a focus on social media. Then, we provide an overview of the application of the TPB to explore entrepreneurial typologies using LCA followed by the findings. Finally, conclusions, recommendations and future research directions are presented.
Entrepreneurial Typologies

Entrepreneurship is an increasingly diverse and complex area, (Cieslik and Dvoulety, 2019). Many motivations and roles drive this in the economy. Although referring to solo self-employed the discussion by, for example, Conen and Schippers (2019) and Burke and Cowling (2019) may also reflect the entrepreneurship field where diversity and heterogeneity are obvious. In fact, Shrzek-Lubasinska and Szaban (2019) refer to segmentation and categorisation of the self-employed, including entrepreneurs, although none have used the Theory of Planned Behaviour model; a further unique contribution of this study. Furthermore, divergence of opinion exists where, for example, Mack et al (2017) conclude that the use of social media and ICT among US entrepreneurs does not differ across age, race and education levels. There is therefore a need to explore this further and attempt to segment the population and better understand this phenomenon of entrepreneurship and social media.

Focusing on the entrepreneur in this research is valid since they are considered “person in control and shaping the organization and its future”, (Wennekers and Thurik, 1999: pp. 29). Indeed, an extensive body of literature already exists on the various characteristics and attributes of entrepreneurship (Shapero and Sokol, 1982; Jones-Evans, 1995; Di Zhang and Bruning, 2011; Cohen et al., 2017; Broomé and Ohlsson, 2018; Beliaeva et al., 2019; Troise and Tani, 2020). However, establishing an agreed definition of an entrepreneur is problematic in that it asserts that, by acquiring a certain set of skills, knowledge and personal attributes, a person is more likely to be successful (Kerr et al., 2018). Gartner (1990) argues that many research outputs are flawed because a clear definition of an entrepreneur, the foci of the study, is not clearly established. The considerable growth of research on entrepreneurs has to a large extent focused on identifying specific individual traits that distinguish them, for example, attitudes to risk (Kets De Vries, 1977),
desire to achieve (McClelland, 1961) and the issue of control (Rotter, 1966). Cieślik and van Stel (2017) explain that an entrepreneur's unique identity, personality and motivation are key factors. Black et al. (2010) reported that previous research has attempted to define the personality of entrepreneurs, hoping to show that entrepreneurs are intrinsically different from others. Background variables such as gender, age, education and prior experience are also likely to be contributary factors. In addition, the literature reports that personal qualities and traits such as self-efficacy, self-confidence, hard ethic and communication skills are synonymous with entrepreneurs (Duchesneau and Gartner, 1990; Huovinen and Tihula, 2008; Laguir and Den Besten, 2016; Scarmozzinol et al., 2017). However, Rae (2007) and Cieślik and van Stel (2017) explain that a person is not simply a set of skills, knowledge and personal attributes. Therefore, their unique identity, personality and motivations, which often change over time, are also likely to be factors. The literature also indicates that entrepreneurs are not homogenous. Therefore, attempting to describe every possible combination of characteristics would be cumbersome and impractical. Instead, researchers have focused on distinguishing between entrepreneurs and the general population (Jones-Evans, 1995; Littunen, 2000; Robert et al., 2009; Kerr et al., 2018). In this context typologies have significant theoretical and practical potential when explaining and exploring entrepreneurs and their activities (Davidsson, 1988; Landstrom, 2010). Indeed, their value in practice is acknowledged, (Panchal and Krishnamoorthy, 2020).

Previous attempts at developing a typology of entrepreneurs has been done, for example, by type of ventures (Gartner et al., 1989), entrepreneurial education (Aadland and Aaboen, 2020), technology engagement (Jones-Evans, 1995), decision making (Nouri and Ahmady, 2018), risk patterns (Miles, 2014), entrepreneurial characteristics (Sussan and Acs, 2017; Gomez-Nuñez et al., 2018), creative entrepreneurial success (Chen et al., 2018) and innovative solutions (Blok et
al., 2015). Each of these examples used data to create groups based on similarities of experiences and/or behaviours. There is however significant variation in typologies. Some typologies focused on how entrepreneurs viewed the start-up process, others focused on risk/innovative activity (for example, Erikson 2001; Risker 1998; Robert et al., 2009). Other authors have focused on organizational objectives such as Zahara et al., (2009) or gender such as Olsson and Bernhard (2021) while Mills and Pawson (2012) examined the psychology of the entrepreneur. There is however limited, or no, research which segments entrepreneurs based on their engagement with social media in business. Previous research have developed ICT typologies, for example, green IT practices, ICT owner-manager skills and operations, digital competency archetypes and leadership and levels of ICT adoption, (Blackburn and McClure, 1998; Berkhout and Hertin, 2001; Jenkin et al, 2011; Spencer et al, 2012; Vieru et al, 2015; Bohas and Poussing, 2016). Investigation of social media specifically is however lacking. Focusing on social media specifically is necessary as these typologies will be used to conceptualise and explain the relationship and any inference between social media engagement and entrepreneurial behaviours/traits, (Collier et al, 2012). This research is therefore required since social media engagement can directly impact upon the strategic focus and development of the business (Jaouen and Lasch, 2013; Chen et al., 2017). In fact, the diverse and heterogeneous nature of the various categories of self-employed and solo self-employed “calls for greater scrutiny” and a significant need to distinguish between the different categories of the self-employed population, including entrepreneurs, (Cieslik and Dvoulety, 2019: pp. 3; Shrzek-Lubasinska and Szaban, 2019). Furthermore, Secundo et al. (2020) suggested that how entrepreneurs use, and engage with, social media is greatly under researched. They argued that it is important to understand the individual's identity and how it develops based on the use of technology in their business activities. If we develop an understanding of the different identities
that entrepreneurs adopt during different business activities, then we can better design initiatives to support and nurture these entrepreneurs and their business endeavours. This research will therefore attempt to address this gap and segment the entrepreneurial population using digital media engagement, namely social media, as a basis for categorisation.

We have chosen to focus on social media because it is accessible to most entrepreneurs due to its low cost and minimal technical requirements. Indeed, Mack et al. (2017) conclude that “most entrepreneurs used social media platforms to market their business”, (pp. 124; Michaelidou et al., 2011; Fischer and Reuber, 2011). Interestingly, Ahmad et al. (2019) report that previous studies have tended to only consider social media use in business-to-consumer contexts. Despite its increasing relevance and perceived value for entrepreneurs, there are still very few studies exploring how entrepreneurs use, or decide to use, social media (Durkin et al., 2013; Fischer and Rueber, 2011; Ainin et al., 2015; Horst et al., 2020; Olanrewaju, et al., 2020). The value of social media for entrepreneurs is acknowledged from growing their brands, companies and online presence (Durkin, et al., 2013; de Vries et al., 2018). For consumers, social media allows online interaction with the entrepreneur’s business by engaging with their brands through feedback and sharing and liking their products (Sheehan, 2010; Sashi, 2012; Adegbuyi et al., 2015). Indeed as social and digital technologies grow this has made the business ecosystem increasingly more complex and merits further investigation, (Shrzek-Lubasinska and Szaban, 2019; Pentina and Koh, 2012). However, regardless of the benefits and low barriers to access many entrepreneurs still find engagement a significant challenge.

Attitudes towards technology and social media play an important role in the prediction of engagement for business activities. For example, McCann and Barlow (2015), Jones et al. (2015) and Cesaroni and Consoli (2016) concluded that social media will become part of the toolkit of an
entrepreneur if they perceive it as having value, increasing sales and market share or creating new leads or relationships. As Dincer et al (2011) argued “the entrepreneur is an active actor” in decision making and therefore is central to this study, (pp. 608). However, it is not solely the attitudes of the entrepreneur that influence decisions but also additional drivers such as level of perceived ability and pressure from peers, competitors and employees (Fillis et al., 2004; Milewicz and Saxby, 2013). Furthermore, additional factors such as security (Shin, 2010) and trust (Kim, 2012) can influence an individual's attitude towards social media and their intentions to engage with it. The more favourable therefore the entrepreneur’s perceptions about trust and security, the more likely they would be to engage with social media as a marketing or business tool.

Specifically, typologies are important to understand the business-related use of social media as Petina and Koh (2012) suggest that “it appears possible to identify emerging consistencies and classify these recurring patterns”, (pp. 293). There is however an absence of typologies in this area. There is a very clear need to develop typologies specific to this business activity. Dincer et al (2011) concluded that “typologies have been developed to describe alternate perspectives of entrepreneurship” using a combination of variable and factors to explain., (pp. 602). Social media is a specific activity therefore that requires specific typologies to explain since “typologies are limited to addressing the primary question”, (Bacharach, 1989: pp. 497). This is considered an important step to better understand social media use among SMEs with typologies long recognised as the foundations for building and establishing inquiry, (Carper and Snizek, 1980; Hambrick, 1984). As an exploratory study the assumed linkage between various entrepreneurial traits and business characteristics to explain social media engagement is an important contribution in conceptualising this activity and ordering and comparing this activity, (Doty and Glick, 1994; Collier et al, 2012).
Despite producing typologies to explain social media engagement these are not without their criticism and limitations. Coty and Glick (1994) and Collier et al (2012) provide a detailed critique of typologies. Critically, typologies may in fact oversimplify complex phenomenon. However, they are a valuable analytical tool that can be used to explain “diverse substantive areas”, (pp. 217). Indeed, typologies are often critiqued and their value underestimated because of misinterpretation however they are a critical means of “incorporating the holistic principle of enquiry into organisational research”, (Doty and Glick, 1994: pp. 244). However, we must be mindful that the social media typologies presented are an initial step which can mask other conceptual complexities.

**Understanding entrepreneurial decision-making**

Central to being an entrepreneur is making key decisions about products, staffing, pricing, business direction and, importantly, innovation processes. Shepherd and Patzelt (2017) have called for more research regarding factors that impact upon entrepreneurial decision-making. Specifically, the attitudes among entrepreneurs towards the situation, the influence of family and others, emotions, stresses and the level of control they feel carrying out the decisions are considered important (Shepherd and Patzelt, 2017; Ilonen et al., 2018; Nguyen et al., 2020). Recently, de Winnaar and Scholtz (2019) identified the need to understand the entrepreneur’s decision-making through the application of more integrative conceptual theories to their mind-set. Previously researchers have used various conceptual frameworks and models to gain a better understanding of how different factors work within the decision-making process. In particular, models such as the Theory of Planned Behaviour (Ajzen 1991; 2002) and the Entrepreneurship Event Model (Shapero, 1975; Shapero and Sokol, 1982) overlap considerably as they explore some of the main
predictors of decision-making such as perceived feasibility and perceived desirability (Kautonen et al., 2015). In fact, the Theory of Planned Behaviour (TPB) is the most frequently applied amongst researchers (Ahuja et al., 2019) and considered most influential (Nguyen et al., 2020). In addition, TPB allows comparison and validation against other applications of the model (Kautonen, et al., 2015). Applications of the TPB have previously been applied to understanding entrepreneurship (Nguyen et al., 2020), entrepreneurial motivations (Alam, et al., 2019) and college student’s entrepreneurial career intentions (Mamun et al. 2017). This model posits that intentions and behaviours are influenced by three variables: 1) attitude towards a behaviour; 2) subjective norms (SN) and the influence of ‘others’ perceptions; and 3) behavioural control (PBC) reflecting how much outcome can be controlled by individual behaviour. The interplay of these three variables during decision making by entrepreneurs could provide insights into business-related social media engagement. The TPB is therefore considered a suitable framework to investigate entrepreneurs and social media engagement and is applied within this research study.

**Research Methodology**

To measure each of the main TPB variables namely attitudes, subjective norms (SN), Perceived Behavioural Control (PBC) and business-related social media (SM) activities an online survey was constructed. Both Ajzen (2021) and Bosnjak et al. (2020) provided clear guidelines and advice regarding the creation of the TPB questionnaire. Construction of such a survey involves an exploratory sequential approach and takes place over two phases, (Creswell and Plano-Clark, 2017). The first phase focused on using structured interviews with entrepreneurial and SME professionals to assist with the construction of the survey. The second phase focused on the construction of the online survey. Each phase will be outlined in turn.
Phase 1: Expert Themes

As recommended by Ajzen (2020), using a qualitative approach can incorporate the beliefs of entrepreneurial professionals in developing and constructing the online survey. Interview questions focused on the following areas: i) the suitability of the TPB in this research and the value of understanding entrepreneurs’ engagement with SM in their business activities; ii) importance of measuring intentions, attitudes, SN and PBC around engaging with SM for business purposes; iii) exploring the role of online trust, security, ROI, and SM business activities; and iv) survey, construction and sampling advice. At each question stage the interviewer rated their response as ‘agreement’, ‘no comment’ or proposed ‘practical implications for research study development’. Participants were permitted to provide additional comments and recommendations. Table 1 presents the responses of participants.

INSERT Table I Expert Interview Themes and Construct Validation

Phase 2: Development and Design of Online Survey

An online survey was created to measure each of the main TPB variables namely attitudes, SN and PBC. Additionally, this survey incorporated the themes and suggestions from the expert participants. Each of the items was rated using a seven-point, semantic, differential scale as recommended by Ajzen (1991) where higher ratings from participants indicated a more favourable attitude towards social media as a tool for business activities. A higher rating on SN indicated more social pressures to engage with social media for business activities. Lastly,
regarding PBC, higher scores indicated a greater perceived ability to use social as a tool for business activities. Specific item information follows.

**Attitudes** were measured using four sets of seven-point semantic differential scales. As an example, the entrepreneurs were asked ‘for me to use social media as a marketing tool within my business would be’. Examples of response formats were ‘extremely efficient’ (1) to ‘extremely inefficient’ (7) and ‘ineffective use of time’ (1) to ‘effective use of time’ (7).

**Subjective Norms (SN)** were measured using one item, specifically, the influence of the attitudes of others on a seven-point scale. Participants were asked ‘if other business owners expect me to use social media as a marketing tool within my business on a regular basis’. Responses were rated on a ‘definitely true’ (1) to ‘definitely false’ (7).

**Perceived Behavioural Control (PBC)** was assessed using four items. As an example, the entrepreneurs were asked: ‘whether or not I use social media as a marketing tool within my business on a regular basis is entirely up to me’ and was rated on a ‘strongly agree’ (1) to ‘strongly disagree’ (7) scale; and ‘I feel I have the ability to use social media as a marketing tool in my business’ was rated on a ‘definitely true’ (1) to ‘definitely false’ (7) scale.

**Intention.** Three items were employed to measure the participants' intentions to engage with social media for their business activities. As an example, the entrepreneurs were asked ‘do you plan to use social media as a marketing tool
within your business on a regular basis? All items were rated on a seven-point scale ranging from ‘extremely likely’ (1) to ‘extremely unlikely’ (7).

**Indicators of Social Media Business Activity**

Additional business-related factors were examined such as social media engagement and trust, personal information and perceptions regarding Return on Investment (ROI). Additional questions captured details on the specific business sector along with job role/position, age and gender. Items were formulated based on the suggestions from the expert interviews as follows.

**Activity** was measured by asking the entrepreneurs how active they were in using social media for business related activities. Any response of ‘only once a week’ or less frequently were coded as ‘low’ users. Those who were more frequent were coded as ‘high’ users and indicated ‘a couple of times a week’ or more often.

**Future use** was measured by asking entrepreneurs if they were ‘going to use social media as a business tool in the future’ and this was rated on a ‘less likely’ (0) or ‘more likely’ (1) format.

**Security and trust** questions focused on perceptions about social media security and its use. The entrepreneurs were asked if ‘using social media as a marketing tool would pose a security threat’. Responses were rated either as ‘concerned’ (0) or ‘not concerned’ (1). Likewise, trust around social media was measured by asking if ‘social media sites can be trusted with the information you provide them’. Binary responses were rated on a ‘less trusting’ (0) or ‘more trusting’ (1) format.
Return on Investment (ROI) was explored using two statements by asking participants to indicate how much social media contributes to their sales and leads. Responses were coded either ‘does not contribute’ (0) or ‘contributes’ (1).

Procedure and Sample Characteristics

This research commenced in 2018 with ethical approval. The research is two phased. At the first phase, structure interviews were conducted to explore the themes relevant to the research. With the research focusing on entrepreneurs and SME start-ups, it was decided that the participants for this phase should be recruited from three key stakeholder groups namely academia, governmental-entrepreneurial policy and business consultants. Participants were identified through their public engagement and support of entrepreneurs and start-ups on the Island of Ireland (IoI). More specially, academics were identified by their entrepreneurship-related publication history, industry consultation and incubation-start-up engagement. Policy advisors and advocates were identified by their advisory roles at national and international levels supporting entrepreneurs and start-ups. All have consulted at governmental level. Lastly, business consults were non-academic individuals who supported entrepreneurs in incubation centres. Their input was deemed as important due to their close connection with industry and the incubation ecosystem. In total, nine invitations were extended to take part in the interviews, thus three from each group. Out of the nine invitations, eight accepted. Each interview lasted thirty minutes with the purpose of informing the construction of the TPB questionnaire and online survey.

For the online survey, an opportunistic sampling frame was employed. The benefits of such a sampling frame are that it allows a timely and cost-effective approach by acquiring salient
attitudes, perceptions and insight from a readily available population of interest (Saunders et al., 2012). Once ethical approval was received, the managers of ten BICs, based on the campus of Irish higher education institutions (HEIs), were contacted. The managers agreed to act as gatekeepers and distribute the survey resident entrepreneurs. The survey was issued to two hundred and fifty-five \( (n = 255) \) users. The survey contained an introduction to the study, ethical considerations and completion instructions. In total, one hundred and forty-two \( (n = 142) \) entrepreneurs participated. However, only one hundred and twenty-four \( (n = 124) \) of the entrepreneurs met the inclusion criteria i.e., they use social media in their business activities. Therefore, the response rate was 48.63%.

The entrepreneurs represented a number of sectors namely ‘Business, Professional and Real Estate’ \( (n = 41, 34.5\%) \), ‘Technology’ \( (n = 27, 22.7\%) \), ‘Financial’ \( (n = 11, 9.2\%) \), ‘Wholesale and Retail’ \( (n = 12, 10.1\%) \), ‘Public, Community and Local’ \( (n = 12, 10.1\%) \), ‘Manufacturing’ \( (n = 5, 4.2\%) \), ‘Accommodation, Hotels and Restaurants’ \( (n = 4, 3.4\%) \), ‘Transport and Communication’ \( (n = 4, 3.4\%) \) and ‘Construction’ \( (n = 3, 2.5\%) \). Interestingly, \( (n = 59, 50.4\%) \) of the participants reported that they had used social media as a business tool for three years or more while 49.6\% \( (n = 58) \) reported they had only been using it for two years or less. The sample was made up of 54.6\% males \( (n = 65) \) and 45.4\% females \( (n = 54) \). The age distribution was as follows: ‘30-39’ \( (n = 47, 38.8\%) \), ‘40-49’ \( (n = 38, 31.4\%) \), ‘50-59’ \( (n = 22, 18.2\%) \), ‘20-29’ \( (n = 12, 9.9\%) \) and ‘60 +’ \( (n = 2, 1.7\%) \).

**Proposed Analytical Plan**

Initially, simple descriptive counts were applied to the participant responses. Figure 2 illustrates the steps taken during the analysis.
Step 1. Latent Class Analysis (LCA) was used as the main exploratory statistical approach as it could uncover hidden, or latent, typologies within the data. Indeed, LCA has previously been used to successfully classify the solo self-employed (Eurofound, 2017). With dichotomous observed social media business-related indicators, LCA is suited to exploring entrepreneurial subgroups or classifications in the data (Tein et al., 2013; Wang and Wang, 2012). The LCA approach undertaken was based on previous recommendations (Weller, Bowen and Faubert, 2020). First, a LCA model was defined using six social media business-related indicators. In total, one-to-six class models were estimated using Mplus 6.11 (Muthén and Muthén, 2010) and employing the robust maximum likelihood (Yuan and Bentler, 2000). Furthermore, to avoid solutions based on local maxima, one hundred random sets of start values were used alongside twenty final stage optimizations. Secondly, once each of the models was tested, class model fit was assessed using several information theory-based fit statistics (Akaike Information Criterion (Akaike, 1987) and the Bayesian Information Criterion (Schwarz, 1978)). The model that produced the lowest values on each of these is the best fitting model. Additionally, the Bootstrap Likelihood Ratio Test (McLachlan, 1987) was employed to assist in class enumeration. A non-significant value suggests a class lower should be considered. Nylund et al (2007) highlighted the benefits of the Bootstrap Likelihood Ratio Test as an aid to decision-making when deciding on the number of classes to accept. Once the best fitting model was selected, using its’ class probabilities for each of the indictors a plot graph is used to aid interpretation and labelling of classes.
**Step 2.** Before conducting the next step of the analysis, the psychometric properties of the TPB constructs are examined. Once established by Exploratory Factor Analysis (EFA) along with construct reliability and validity, Step 2 can be carried out (See Figure 2). A Multinomial Regression (MLR) was used to aid understanding of how each of the TPB variables (Intentions, Attitudes, SN and PBC) predict the social media business-related nominal classes. A further MLR was applied to examine the role of each of the external factors such as gender, job position and age. As Weller et al. (2020) reported this step is part of the validation process as it is important to examine how typologies relate to relevant outcome factors.

**Results**

Table II presents the descriptive breakdown of the binary indicators included in the LCA.

**INSERT Table II Descriptive Breakdown of the Binary Indicators**

Most of the participants \((n = 93, 78.2\%)\) reported a low level of social media related activity although 68.3\% \((n = 84)\) indicated that they were likely to use it in the future. Interestingly, 59.0\% \((n = 72)\) of the participants reported that they were concerned about providing personal information on social media platforms with 57.7\% indicating \((n = 66)\) they do have trust in social media. Regarding Return-on-Investment for business actives, three-quarters \((n = 84; 75.7\%)\) of the participants reported that social media contributed to both sales and leads.

During the first stage of analysis, a number of possible typologies were explored based on the entrepreneurs’ engagement and perceptions regarding business-related social media use. Six models were tested and the fit indices of each of the models are displayed in Table III.
Examining the fit indices of each model, it was clear that a five-class model did not significantly add to the four-class model. Since the six-class model was reported to be non-significant that was excluded. A four-class model was selected as the best solution. Overall, the four-class model had the lowest AIC (AIC = 1986.161) compared with the three-class and five-class model. The BIC (BIC = 2076.410) was lower than the five-class model and the four-class model did significantly improve upon the three-class (BLRT = 21.818; p = .001). Not only did the BLRT support a four-class model but it was also more parsimonious.

Understanding each of the four-classes in terms of how they differ from each other is important in order to create meaningful labels and categories. These labels aid our understanding of the characteristics of the entrepreneurs based on their social media engagement and perceptions. Table IV presents the four-class probabilities against each of the indicators as well as descriptive information about each.

**INSERT Table IV Four Classes**

The fourth class is the largest group (n = 36; 29.0%). Participants are characterised only by the likelihood of using social media for business activities in the future (0.60). This group was labelled ‘Passengers’. The second group (n = 32; 25.8%) had a much higher probability of seeing social media contribute to their sales (1.00) and leads (1.00) and were therefore more likely to use it in
the future (0.78) and to trust it for their business activities (0.70). This group was labelled ‘Opportunists’. Similar in size \((n = 31; 25.0\%)\), the next group were labelled the ‘Assureds’ as this group had a higher probability of seeing social media contribute to leads (0.91) and sales (0.82) and were more likely to use social media in the future (0.79) and believe that their personal information will be kept secure (0.55) and trust (0.54) social media for their business activities. The final, and the smallest, group of participants \((n = 25; 20.2\%)\) were characterized by higher probabilities in relation to the contribution that social media adoption makes to developing leads (0.91), generating sales (0.61) and the use of social media in the future (0.54). Based on the evidence this group was labelled the ‘Hopefuls’.

**Exploratory Factor Analysis**

The psychometric properties of the TPB factors were examined. Only the multiple item constructs were included in the Exploratory Factor Analysis (EFA). All three analysis employed Principal Axis Factoring with Direct Oblimin and factors with Eigen values over 1 reported for each of the EFAs. Post-hoc analysis to test for Common Method Variance (CMV) employed Harman’s one-factor technique using all the predictor constructs of the TPB. Results reported a value of 36.28% variance which is below the 50% cut-off suggesting no issue with CMV (Fuller *et al.* 2016).

**INSERT Table V TPB Constructs with associated items**

**Intentsions Toward Engaging with Social Media for Business Activities**
The analysis reported a one-factor solution and accounted for 66.59% of variance explained. All three items had favourable factor loads (Field, 2009) and yielded a favourable level (Kline, 2000; Wim, et al., 2008) of internal consistency (α = .75).

**Attitudes Towards Engaging with Social Media for Business Activities**

One factor accounted for 57.57% of variance explained. Three out of the four items tested reported loading above the 0.4 level (Field, 2009) and only one failed to reach the desired level and was removed. The three item attitudes had a satisfactory associated internal consistency (α = .80).

**PBC and Social Media Business Related Activities**

Regarding PBC, a one-factor solution emerged which accounted for 56.05% of variance. Each of the loadings were over the 0.4 level cut-off (Field, 2009) and had a moderately favourable internal consistency (α = .61). The Zero-order correlations are presented in Table VI.

**INSERT Table VI Zero Order Correlations**

In considering the correlations between the TPB constructs the strongest significant relationships regarding intentions to engage were in relation to attitudes (r = .60, p < .01); both PBC (r = .50, p < .01) and SN (r = .44, p < .01) had more moderate relationships. Overall, the findings support the construct validity of the TPB and, since the correlations between the independent variables ranged from 0.18 - 0.54, it would suggest acceptable discriminant validity (Fan et al., 2017). Additionally, this would also suggest that the correlation was not very high (not greater than 0.7) therefore a lesser likelihood of collinearity issues, (Miles and Shevlin, 2006).
In the third stage of the analysis a Multinomial Logistic Regression (MLR) was employed to analyse the TPB predictors to assist in understanding the differences between the groups (Hopefuls, Opportunists, Assureds and Passengers). The reference group for the outcome variable was the Passengers (largest group). The primary aim of this analysis was to focus on the relationship between each of the TPB variables (Intentions, Attitudes, SN and PBC) and the four groups of entrepreneurs. The results are presented in Table VII.

**INSERT Table VII MLR of TPB Predictors for Entrepreneur Groups**

The first column in Table VII compares the Hopefuls to the reference group (Passengers). The analysis indicates that the Hopefuls are significantly less likely to report higher levels of PBC (OR = .79, p < .05) than the Passengers. The results also indicate that Intentions, Attitudes and SN had no reported significant effect. Comparing Opportunists with the reference group it was only Attitudes which were statistically significant. The findings suggest that the Opportunists are more likely to have favourable Attitudes (OR = 1.29, p < .05) than the Passengers. Finally, comparing the Assureds to the Passengers concluded that three of the TPB variables (Intention, Attitudes and PBC) are statistically significant, indicating that this group are more likely to have both increased probability of increased Intentions (OR = 1.24, p < .05) to use social media for business activities and more favourable Attitudes (OR = 1.30, p < .05) towards social medial related business activities. However, the Assureds have a lesser probability to hold levels of PBC (OR = .84, p < .05) suggesting the need for lesser perceived ability using social media for business activities. Finally, SN was reported to not have a significant effect.
A second MLR was employed to analyse demographic factors such as age, gender and work positions as predictors of group classification. Multicollinearity was not an issue as the Standard Errors (SE) were all under 2.0 (Mohamed et al., 2016). The results are presented in Table VIII.

### INSERT Table VIII MLR of Demographic Factors for Entrepreneur Groups

The *Passengers* group was used as the reference group. Our analysis indicated that, for both the *Opportunists* and the *Assureds*, the predictors of age and gender were not statistically significant. In contrast, when comparing *Hopefuls* with *Passengers*, age was found to be significant. Specifically, there is a significant likelihood of being older in the *Hopefuls* group (OR = 1.86, p < .05) than in the *Passengers* group. Gender did not have a significant effect on the outcome. Additionally, the MLR analysis indicates little chance of multicollinearity as SE were under 2.0, (Mohamed et al. 2016).

### Emergent Typology Discussion

This research provides novel insights into how different entrepreneurs engage with social media in their business activities. It attempted to address two key research questions.

**RQ 1:** *Are there different latent entrepreneurial typologies explaining business-related social media activities and engagement?* The findings of this study indicate that there are four types of business-related social media based entrepreneurs. Similar to other research these typologies “represent a middle ground between treating each entrepreneur as unique and representing diverse populations through one set of averages”, (Woo et al, 1991). Each of the four entrepreneurial
typologies differ by the probability levels of each of the indicators. In other words, the pattern of indicators considered as impactful upon business-related social media activity decisions helps better explain different Irish entrepreneurs in this context. **Hopefuls**, the smallest typology group, are currently low users of social media but anticipate more extensive use in future. They have low levels of trust in social media platforms with concerns regarding personal information but they see impact, in terms of sales and leads, from their limited engagement. As the name suggests they are hopeful of engaging more with social media in the future. On the contrary, **Passengers**, who are the largest group, have low levels of social media use with predicted higher use in future but they trust the platforms with no concerns regarding their personal data however they see limited impact regarding sales and leads from their engagement. Essentially, the Passengers are following the crowd, potentially the other incubator centre residents. The third typology, **Opportunists** also have low current usage but expect higher levels of use of social media in future, coupled with low levels of trust in the platforms along with concerns regarding personal information. They do however see impact in terms of sales and leads from their social media engagement. Most likely attitudes to trust and risk will alter with the passage of time as their experience and use of social media platforms continues. Finally, **Assureds**, like other typologies, currently have low levels of use of social media with higher levels planned for the future. They have high levels of trust in the platforms with no concerns regarding personal information and see the impact of social media in terms of sales and leads. Whilst these last two typologies only differ based on trust, combined they reflect the majority of entrepreneurs in BIC in Ireland regarding business-related use of social media. Interestingly, this could infer that the entrepreneurs awareness of trust and risk issues, associated with social media platforms, is limited – an area that requires further examination as risk in social media adoption by SMEs is under-examined
according to Beier and Wagner (2016). Finally, it would also appear that the increased use of social media in future is to be expected as the SMEs develop more favourable attitudes to social media with experience and enhanced awareness.

Typologies such as these are useful in research, particularly in Entrepreneurship research, similar to previous categorisations, based on social media engagement and are a very useful outcome (Robert et al., 2009; Mills and Pawson, 2012). Figure 3 presents the four-group typology. In particular, similar to Pentina and Koh (2012), typologies to explain emergent patterns of behaviour regarding social media and SMEs are in fact needed to expand understanding.

**INSERT Figure 3 Social Media Use among Entrepreneurs**

**RQ 2:** Do possible differences exist between these entrepreneurial business-related social media typologies, explained by decision-making, personal abilities, attitudes and the influence of other individuals? RQ1 identified four distinct entrepreneurial groups based on their social media business-related activities but did not reflect on their intentions, attitudes, abilities or personal characteristics. RQ2 compares entrepreneur typologies based on factors measured by the TPB. This study concludes differences in the influence of these factors between the four typologies created. More specifically, entrepreneurial engagement with social media-based business activities can result from psychological and motivational influences, their attitudes, influence of others, their personal ability or even age; all have a unique role within these entrepreneurial categories. Since entrepreneurial groups are distinguished by their social media business-related activities understanding their engagement more could better aid supporting their business needs. These findings
imply that the psychology of an entrepreneur needs to be better understood (Frese and Gielnik, 2014), especially as the key psychological variables of attitudes, perceptions, social pressures, and abilities as measured by Ajzen’s TPB (1991). Interestingly, the psychological factors were more likely to play an important part regarding entrepreneurial business activity, more so than that of age or gender.

The four typologies also differed based on their perceptions of risk regarding social media usage and its subsequent impact on sales and/or leads. All four groups report low levels of current engagement with social media. However, all four groups report that they anticipate high levels of engagement in the future. Risk and impact are two areas where the groups demonstrate differences. The Hopefuls and Opportunists are very similar but differ since the Hopefuls currently have very low usage of social media and their trust of the platforms is low in comparison to the Opportunists. The Assureds are different in that they have no issues with social media but continue to have low engagement whilst the Passengers are using social platforms, possibly due to industry/contemporary pressure, but are seeing little impact on leads and sales. Similar to McCann and Barlow (2015) the impact and benefit of social media for businesses may not be fully understood yet.

INSERT Figure 4 Risk Profile

Interestingly, there is distinction between the groups when risk (safety of personal information and trust of the social media platform) and impact (social media resulting in sales and leads) are interrogated. The typologies indicate that entrepreneurs see risk as having two component parts: 1) trust in profiles and 2) information security. Significantly, the presence of both is not required to establish overall trust in this instance. Indeed, although the Hopefuls and Opportunists display
low levels of trust in social media, and have security concerns around personal information, they continue to engage with social media. The Assureds and Passengers demonstrate high levels of trust and do not report perceived threats regarding personal data. However, their engagement level remains the same as the other groups. Beier and Wagner (2016) previously concluded that high perceived levels of risk may be a significant barrier among businesses to using social media.

**INSERT Figure 5 Impact Profile**

Furthermore, reflecting on the impact of social media, three of the groups, except the Passengers, demonstrate high levels of impact in terms of sales and leads – an outcome which contradicts Beier and Wagner (2016). This is despite low levels of engagement. In contrast, the Passengers show low levels of impact, based on low levels of engagement. This occurs despite acknowledging trust in the platform and reported issues with personal data.

**Implications for business knowledge, education, and training**

The findings of this research indicate that, in relation to social media use, there are four distinct types of entrepreneurs. This research clearly suggests that social media use by SMEs is an accepted practice for future business activities although at low levels of engagement currently. Similar to Cieslik and Dvoulety (2019) this research “serves as an important step to a unified framework for segmenting the population” of entrepreneurs, (pp. 20). Indeed, this research addressed calls by, for example, Shrzek-Lubasinska and Szaban (2019), to establish “cluster-like definitions for particular subgroups of the self-employed population” and the need for better modelling of
adoption, (pp. 384; Beier and Wagner, 2016). The value of this research is that it is the first of its kind to create a typology of entrepreneurs using TPB and LCA. Furthermore, this study adds to, and extends, existing knowledge around entrepreneurial behaviours and decision making using contemporary issues such as social and digital media engagement as a method of categorisation.

Whilst the research is set in Ireland, the insights drawn can be analysed and explored in other geographical settings and indeed generalised, with caution. The research has also addressed calls by, for example, Chen et al. (2017) and Secundo et al. (2020), by demonstrating how different types of entrepreneurs directly impact upon strategic choices and decisions regarding social media. Indeed, the study extends understanding further by demonstrating how there are similarities and differences amongst entrepreneurs by developing four typologies. Furthermore, the research corroborates authors such as Black et al. (2010) who suggested that entrepreneurs differ across various business activities specifically in relation to their use of social media for business activities. This research, in fact, extends this position further with the development of the typologies. This research also extends work by, for example, McCann and Barlow (2015), Jones et al. (2015) and Cesaroni and Consoli (2016) by better explaining what factors influence entrepreneurs in their use of social media for business purposes. It also serves to corroborate, and confirm, how risk and security remain critical influences in entrepreneurial decision making using the lens of social media engagement, (Kets de Vries, 1977; Shin, 2010 and Kim, 2012). Finally, the study concluded a low level of engagement with social media for business-related activities across all four groups, in spite of evidence of significant benefits of use (Shin, 2010; Scarmozzino et al., 2017; Srinivasan and Venkatraman, 2018).

This study is important because the typologies provide a useful interpretation of an under-researched area, which can subsequently be replicated in other countries, beyond Ireland, and
contexts to better understand entrepreneurial behaviours and practices. Furthermore, typologies are very useful to simplify often complex information and phenomenon, in this case, social media engagement and entrepreneurs. The typologies of entrepreneurs and social media engagement developed provide a useful categorization of entrepreneurs with similar attributes categorized together and an opportunity to explore how different typologies may behave or exhibit different social media behaviours – a critical development in understanding the impact of entrepreneurs on an organisation’s practices, activities and strategies. In fact, the typologies can be used to compare differences regarding an entrepreneur's perceptions, abilities and the supports they need to successfully use social media. For example, similar to Mack et al (2017) there is a need to consider policy and practices to support entrepreneurs who have less engagement with social media, such as the Hopefuls, to ensure they remain competitive. A key outcome of this research is that we propose that an emphasis should be placed on applying LCA to expose the hidden typologies of entrepreneurs in other datasets, both existing and new. Applying such an approach allows patterns in the data to be more fully understood and supports segmenting and creating profiles, which can lead to sophisticated insights and the development of real-world solutions.

There are significant implications for education and training providers. The typologies developed can be used to support specific strategies for nurturing and supporting social media use. There needs to be additional education and training provided, by both government and support agencies, in response to the typologies developed. Alternatively, the existing provision may need to be revised to embed customised offerings to meet the different needs of entrepreneurs depending on their risk and impact perceptions, for example. There also needs to be training for entrepreneurs in relation to the use of metrics and measurement of social media regarding ROI. HEIs can support this by developing training courses. Building on this, provision should include confidence and
usability exercises which will support improved decision-making in relation to social media. In terms of the social media ecosystem, trust, security and privacy factors are paramount and should be promoted explicitly by social media platforms. Entrepreneurs need constant reassurance regarding best practice in the management of user information and security certification. For example, the *Passengers* would benefit from mentoring on how to deliver impact through social media in terms of leads and sales, whereas the *Hopefuls* would benefit from support to help resolve their issues around trust and risk. A key implication of this research is that entrepreneurs, through enterprise agency support, should be developing social media plans based on the constructs identified in this research namely activity, aspirations for use, alleviating risk and creating deliverables to impact on leads and sales. Indeed, the development of bespoke interventions, based on clusters and categories of entrepreneurs sharing similar needs, experiences and activities, would help enhance the overall impact of government initiatives on the commercial and economic performance of entrepreneurs and their industry competitiveness.

**Limitations and Future Research**

This study is not without limitations. Several limitations have been identified using LCA as a statistical approach, mostly around the labelling of classifications and selecting the right number of classifications (Weller et al., 2020). There is however clear advice and guidelines to minimise these limitations (Geiser, 2012; Weller et al., 2020). Also, in comparison to other statistical approaches that could be applied to this data type, LCA is more suitable and robust (Collins and Lanza, 2010; Geiser, 2012; Weller et al., 2020). Additionally, our sample size is small and a greater number of respondents would add an additional perspective. The sample is also set in an Irish context. Therefore findings from this study should be generalised with caution although, as
Ireland is an EU member state, there may be relevance to other European countries. However, LCA is an appropriate method to analyse smaller sample sizes. Future research could target training events to increase the sample size and gain an increased variation in product and service types. Despite this it is envisaged that the typology produced will serve as the basis for further thought and empiricism. The profiles of impact, risk and social media usage developed require further examination with a wider population of respondents and, indeed, using a sample not located in a BIC and beyond the Irish context to facilitate comparative investigations. In addition, it would be important to survey entrepreneurs at various stages of development to explore how the typologies fit or remain relevant. Finally, a study revisiting the respondents in this study would provide very interesting outcomes and conclusions in terms of the ongoing relevance of the typologies developed and distance travelled. For example, research could measure social media business-related activities from entering the BIC until exit to explore how entrepreneur’s profiles may change over time.
References


