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Aims and Scope

Welcome to the fifth edition of the Advances in Management and Informatics (AMI) Journal. This is the edition includes the award winning papers from our AMI Conference in 2019.

Advances in Management and Informatics (AMI) is a journal that allows members of Cardiff School of Management to contribute topics of interest, ranging from embryonic ideas through to work that is nearing completion. Some of the ideas presented to the editor have since been published, and some are undergoing further research. We would like to stress that as this is a working paper journal, publication here does not preclude the authors from publishing their work elsewhere. We welcome submissions and comments to the address AMISjournal@cardiffmet.ac.uk, a template can be found in the CSM webpage, http://www.cardiffmet.ac.uk/management/Pages/default.aspx

Editorial

This edition is pleased to present the 2019 AMI Conference Best Paper Prize Winner "How Agile Am I? An Initial Analysis of Student Reflective Narratives of Their Employability and Enterprise Development." By Karen Clinkard. This first paper explores the development of student employability and enterprise skills during their HE experience via a student's reflective narrative approach. The research examines the relevance of current measurements of employability and entrepreneurial skills and the impact of enabling student's individual insights during the process of their course inform focus. The second paper examines whether company size alone has an impact on the sophistication of the used costing system. The paper presents the case that the age of a company has an impact as well as size. Paper two examines the perceptions of the founders of IT Start-Ups within a challenging economic environment from the Greek perspective. The focus of paper three is to examine the issue of urban myths and fake news and their relevance or impact on brand reputation which given the current times is an important consideration for organisations.

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ADVANCES IN MANAGEMENT AND INFORMATICS:
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Conference 2019 Best Paper Prize Winner

How Agile Am I?
An Initial Analysis of Student Reflective Narratives
Of Their Employability and Enterprise Development.

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KEY WORDS

Employability, Enterprise, Mindset

ABSTRACT

This paper contributes to debate of the relevance of current measures of employability and entrepreneurial (E&E) outcomes from Higher Education (HE). Given current metrics are often reliant upon statistics at predominately general, cohort level as a one-off cross-section (e.g. DLHE); are they fit for evaluating longer term E&E gains from a University experience? Does attempting to perform against exit performance metrics engender positive or negative responses? Educators and employers increasingly argue E&E outcomes should not focus heavily on hard skills, but a broader range of behavioural, attitudinal and mindset changes, claiming these provide more sophisticated bases for exploring the longitudinal value of the HE experience. Relatedly, this paper asks is there value in individual students contributing contextualised insight, in the form of their own E&E development narrative? Qualitative and quantitative data gathered from approximately 300 Undergraduate students at a UK business school, using the AGILE self-reflection tool, are evaluated to investigate correlations between student demographics, subject studied and exposure to enterprise education (EE), as variables, affecting E&E development. Initial findings indicate that certain self-reported AGILE scores increase as students get older and progress through levels of their course, whilst others do not. The aim is to further discussion relevant to all HE stakeholders (including staff in careers and entrepreneurial services, teachers, programme leaders, strategic

decision makers, students, employers and policy makers), regarding E&E development and outcome measures. Importantly, it is hoped readers perceive valuable insights for enhancing curricula, through identification of tangible benefits to students, from adopting AGILE mindset development.

1. INTRODUCTION

The relevance of current measures of employability and entrepreneurial (E&E) outcomes of a course of Higher Education (HE) study continue to be debated (Murray, 2019; Rae, 2007; Rae, 2017; Scott, Penaluna & Thompson, 2016). Given current metrics are often reliant upon statistics at predominately general, cohort level, taken at a one-off cross-section point (e.g. DLHE); are they fit for evaluating the longer term E&E gains from a University experience (Holmes, 2013a, 2013b)? HE stakeholders continue to discuss whether attempting to perform against exit performance metrics, engenders positive or negative responses (Knibbs, 2015). Educators and employers increasingly argue that E&E outcomes should not focus heavily on hard skills, but a broader range of behavioural, attitudinal and mindset changes (Fletcher-Brown, Knibbs & Middleton, 2015), claiming these provide more sophisticated bases for exploring the longitudinal value of the HE experience for graduates (Pickernell, Packham, Jones, Miller & Thomas, 2011). Importantly, this paper asks is there value in individual students contributing contextualised insight, in the form of their own E&E development narrative? Let us first review other perspectives and findings which lead to the development of this model and identify gaps for empirical research.

2. LITERATURE REVIEW

Defining Enterprise Education

The revised QAA Guidelines on Entrepreneurship Education (EE) identify the link between employability and enterprise (E&E) "*interventions that are focused on supporting behaviours*, *attributes and competencies" [and the] significant impact on the individual student in terms of successful careers, which in turn adds economic*, *social and cultural value*", (January 2018: 5), which the 'Entrepreneurial Competence' model attempts to capture (Bacigalupo et al. 2016).

The QAA report, created by educators in the higher education sector continues to explain the role of EE in preparing students for a changing work environment (Holmes, 2013) and emphasises the need to measure the outcomes or value of EE in terms of how it helps students to develop "*competencies to lead a rewarding, self-determined professional life*" QAA, 2018:5). Simultaneously, the Destinations of Leavers from Higher Education (DLHE) has been relaunched as the "Graduate Outcomes" report aiming to "*improve the evidence base to help institutions identify the impact of Entrepreneurship Education on jobs and the economy*" and to offer "*a better way of capturing the outcomes for students who take non-traditional routes, including through entrepreneurship, self-employment or freelancing* (QAA, 2018: 7). Additionally, Enterprise and Entrepreneurship has been recognised as a subject discipline within the Higher Education Classification of Subjects (HECoS) coding system, which replaces the JACS system, when implemented from autumn 2019.

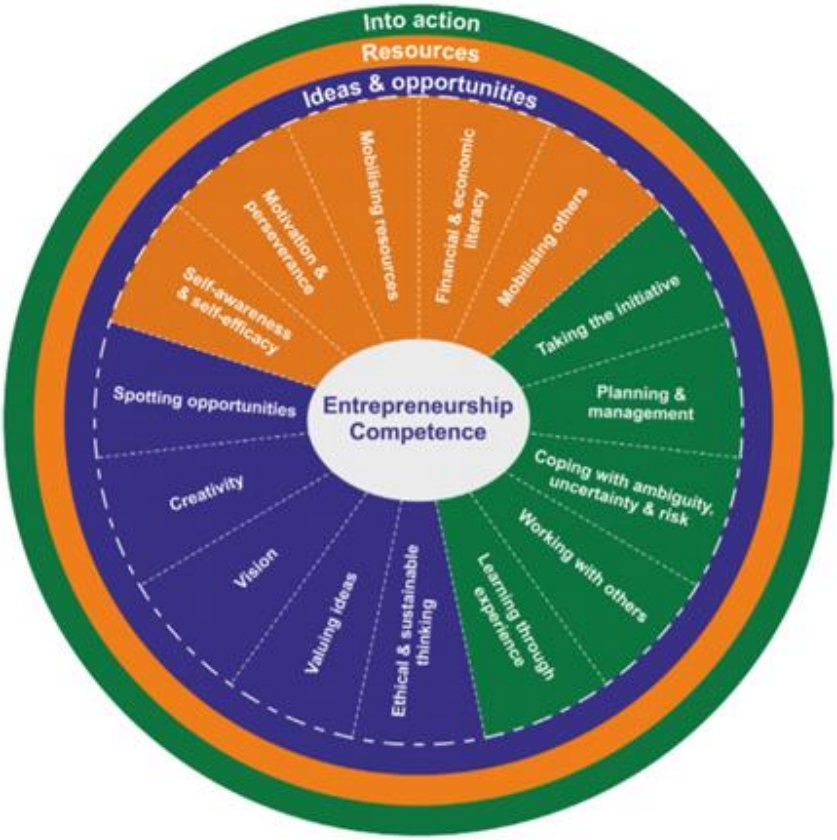

Figure 1: European Joint Research Centre 'EntreComp' framework, Bacigalupo *et al*. (2016, page 6).

Next, the QAA guidelines attempt to map how this 'competence' development could be identified in terms of entrepreneurial awareness, mindset and effectiveness.

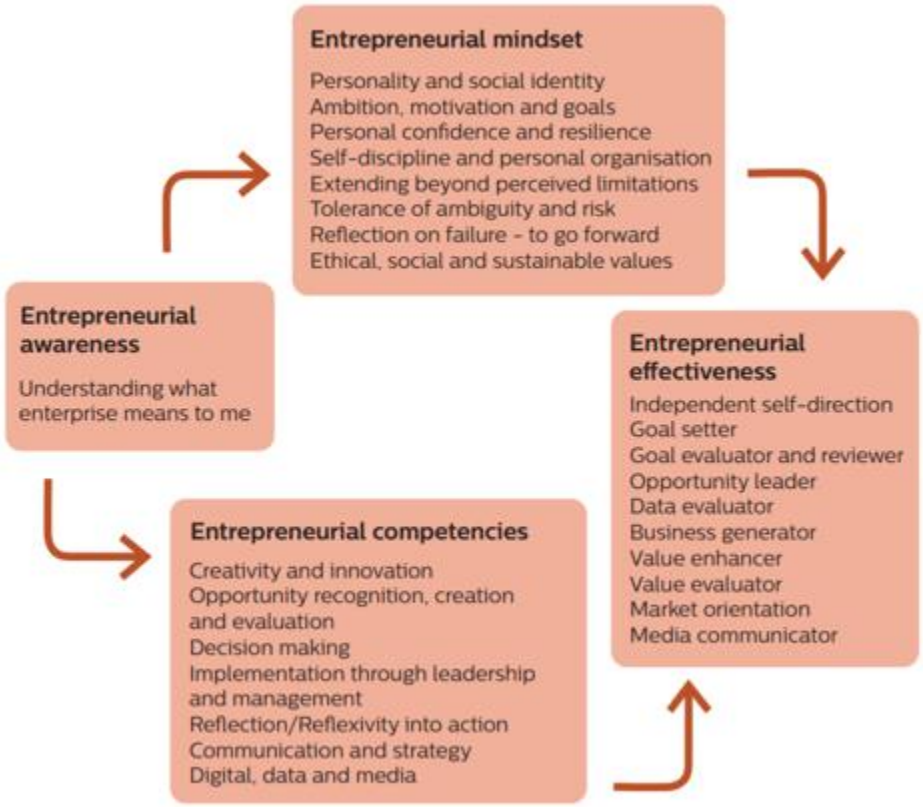

Figure 2: Mapped connections between development entrepreneurial effectiveness and graduate outcomes, (QAA, 2018, p.21), cited by Clinkard (2018:382).

The authors assert an important HE response to their recommendations is to review "*approaches taken to learning and collaboration and the resulting behaviours, attributes and competencies that are developed. Taken together, this is where the overlap and synergies with entrepreneurship and employability and their constituent features occur"* page, 10. Yet what does it mean to be "entrepreneurial"? In the same way as "employability" has been misinterpreted to mean "being employed" (Tymon, 2013), Rae *et al.* (2014) insist starting-up upon graduation is too limited a view of entrepreneurial gains of HE.

Start-up as a flawed metric: gaps between aspiration, intention and action

Graduates and students who start their own business, become self-employed, work as freelancers or utilise entrepreneurial thinking in larger organisations ('intrapreneurs'), contribute towards economic growth and innovation (Rae *et al.*, 2014). Yet "*while many young people aspire to be entrepreneurs, they are also the least likely of all age groups to act on their intentions*" (Centre for Entrepreneurs (CFE), April 2017: 5). The Global Entrepreneurship Monitor (GEM, 2017:5) identified that 18-24 year olds are almost 20% less likely to report they have the skills, knowledge and experience to start a business, for many reasons, including their "*struggle to build up appropriate professional networks*".

Figure 3: Self-reported skills, knowledge and experience to start a business by age, GEM (2017), page 5.

Perhaps this is to be expected given these are the least experienced segment, plus, starting-up is not for everyone, nor every student; with many finding managing their time to ensure they complete their degree challenging enough. Additionally, they face mounting debt which has "*been linked to a fall in business ownership among young people…causing graduates to defer or even abandon their plans to go into business*" Small Business Majority (2016:5), page 5, hence "*many graduates planning to start a business prefer to wait several years before doing so*" (page 8, CFE 2017) which supports the graduate "trajectory" claims of Holmes (2013). Critics of the Destination of Leavers from Higher Education (DLHE), which tracks where students are just 6 months after leaving, claim their change to increase this up to 3 years after graduating, is still not long enough to capture the gestation period utilised by graduates before starting up. It also "*makes it unable to provide any information on the long term graduate entrepreneurship rate… extending the longitudinal aspect of the DLHE would enable this analysis on a regular basis, for specific graduating cohorts, and with a much larger sample size*." (CFE, 2017, Page 35).

Although various reports (NCEE, HEFCE, EEUK) find when students start-up after engaging in curriculum-based EE, their firms are more likely to have a higher value in terms of their revenue, export activity and labour force employment, correlation between intention and action is less encouraging. Reassuringly however, those who engaged in extra-curricular enterprise related activities show positive inclination and likelihood to apply that thinking to intrapreneurial contexts, perhaps spurred on by the fact these activities do not carry the same pressures or constraints, as assessed curricula (Boon *et al.*, 2013). Yet the same report found students perceived "*academic efforts to teach entrepreneurship are not the right approach*" (CFE, April 2017, page 28) and called for more structured support particularly aimed at graduates, to help them turn their ideas into sustainable businesses.

Redefining E&E metrics

Harrison and Leitch (2010) point towards the value generated by graduate entrepreneurial development to the economy. Although their attention is on policy and financial outlay related to University spin-outs, they question whether the costs of delivering and supporting entrepreneurship are ever truly outweighed by the revenues generated. They highlight "*growing concerns that the focus of universities and of policy-makers has been on the number, rather than on the quality and commercial viability of start-up ventures, with correspondingly less attention given to their wider and longer-term impact*", page 1242. Yet to support EE development purely for the purposes of revenue generation would disregard the value of the learning process itself, knowledge gained, skills developed and latent 'seeds' of stimuli for behavioural change which may later grow as a result (Chevalier *et al.*, 2009). Let al.one the networking and community value that EE provides, as illustrated by the other contributors to research in this area (Hodge *et al.*, 2011). .

Table 1: Distribution of graduate freelancers and business founders after graduating, CFE Labour Force Survey (2017).

TIME GAP BETWEEN GRADUATION AND ACTIVITY	FREELANCERS	BUSINESS OWNERS
0-3 years	25.9%	16.6%
4-7 years	16.7%	15.6%
8-11 years	14.7%	16.5%
12-15 years	11.2%	14.8%
16-19 years	8.0%	12.3%
20-23 years	7.3%	7.7%
24 years +	16.3%	16.5%

The CFE claims that incubators within universities can provide the physical side of resources offered (such as hot desks, workshops and funding services), as well as soft skills development through mentoring and coaching, yet find that related services often lack deeper engagement at the level of emotional intelligence, resilience training or confidence building, which tends to be developed later in life (Kerr, 2017; Tervo, 2014). Ironically, if those incubators operated in an entrepreneurial way, by linking up with external private sector / corporate sponsors, through government / bank funding or local enterprise partnerships, they could provide a self-sustaining platform for funding and advice, providing a unique infrastructure for helping those graduates resolve just such financial issues! Further to this, if alumni are directly involved in support to new starters through provision of mentoring, coaching and sometimes funds, as well as working alongside graduates, universities can increase their graduate talent retention (Nicholls-Nixon *et al.*, 2018).

Sadly, focusing on founders' capabilities means that many university incubators are "*industry agnostic*" (Red Brick Research, 2016). Equally Rae (2017) warns of over-reliance upon incubators and university enterprise centres as they are often perceived by students as 'peripheral', in terms of physical location and mental marginalisation ("*thinking spaces*", page 488), with activities seen as disconnected from core learning. He explores distinctions between 'education' and 'learning' and recommends an integrative approach between the two for entrepreneurship by connecting individuals and creating shared learning value. Hart *et al.* (2013 and Wenger (2010) agree that 'communities of practice', where entrepreneurs at any stage meet, network, collaborate and work together even informally, have significant collective benefits. The challenge here appears to be developing the right blend between curricular / extra-curricular and centralised / decentralised learning opportunities and situational contexts. American university incubators claim, "*it is the traits of the entrepreneurs themselves that are, above all, important… qualities such as coachability, passion and entrepreneurial mindset, [are more important indicators] than the ideal product*", (CFE, 2017:7)

Incubation and university based start-up support therefore should not be seen as exclusively provided for current students but as an open-door offer for alumni to come back in at any later stage, given their likely portfolio career trajectory and need for support through later transitions (Clinton, Totterdell and Wood, 2006). So we should consider the extent to which degrees prepare students too much for one future career (even in professionally oriented courses) and what could be done to assist students in being more adaptable (Fletcher-Brown *et al.* 2015)?

Metrics of impact

As the broadest review across the sector, the QAA guidance (2018:5) provides a model which clearly illustrates the inter-relationship between employability and enterprise and suggests a range of ways in which to develop more sophisticated means for measuring longer-term value of EE. Pertinent to this study, it includes: *looking "beyond simply measuring the number of businesses immediately created by students or graduates, [considering] the innovation process and portfolio assessment [which] surface soft skills" and [taking] into account student views, feedback and experiences" as "double-loop learning can provide valuable insights"* page 20.

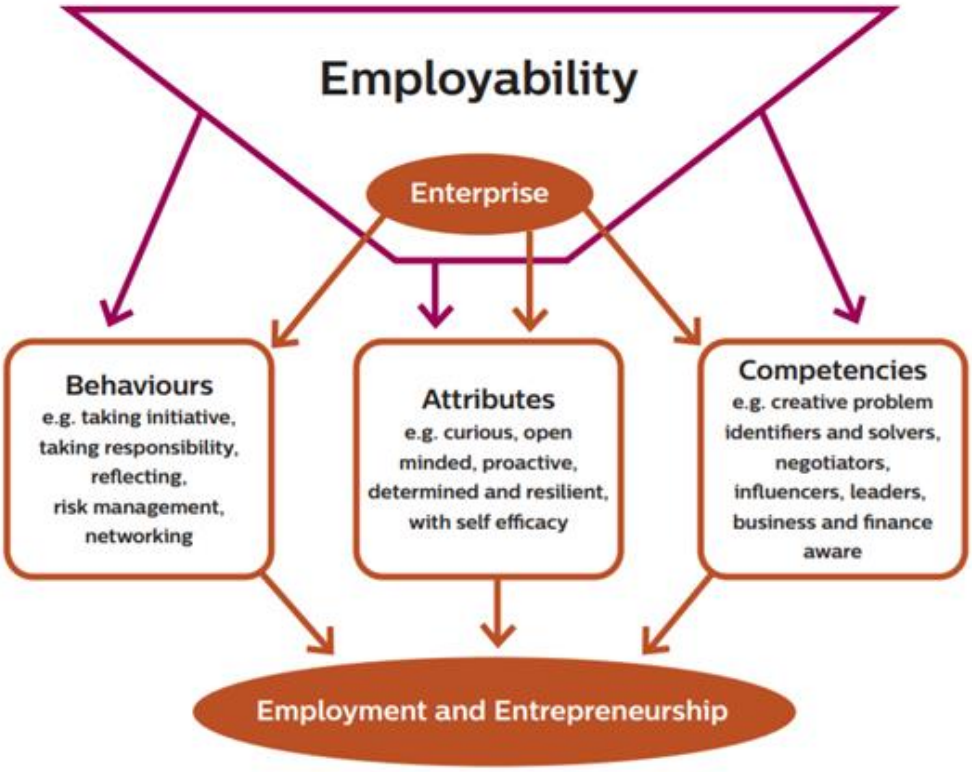

Figure 4: Synergies between enterprise and employability, QAA EE Jan 2018 guidelines, page 13.

Encouragingly, policy development efforts by Penaluna as mentioned in Jones (2018) and Scott *et al*. (2016) amongst others, mean EE is increasingly being written into national level policies for education and innovation, including those which require EE to be considered "mainstream" i.e. embedded at all levels and subjects of study and incorporated at institution level as an 'ecosystem' (Belitski and Heron, 2017), with creativity as a key focus in terms of teacher training as well as student-centred design (Rae, 2017), delivery and assessment.

How graduates explain the value of enterprise education

Jones *et al.* (2017) suggest that "*graduate entrepreneurs exhibit both general and specific competencies in accessing knowledge from a range of sources*" page 692, including university-based, informal sources, networks, trade associations or industry knowledge (from customers and suppliers). Their EEUK study attempted to address the need for longitudinal exploration of the career impact of entrepreneurship education (EE), stating "*literature considering the long-term impact of EE is nascent and requires reinforcement and extension*", page 690. Findings from their quantitative study of alumni, several years on from their EE accredited course experience, exposed nuances of benefits

from various methods of delivery (curricular and non-curricular) and discreet differences between enterprise and entrepreneurship skills and knowledge gains, as supported by QAA models (Figures 2 & 4). Respondents were asked to recall against a list of 22 common EE content elements.

Table 2: Alumni recall reported EE course content Jones *et al.*, (2017), page 697.

Content	% of respondents	*n* (missing)
Entrepreneurial opportunity recognition	63.2	76 (10)
Small business start-up	73.2	82 (4)
Small business planning	76.8	82 (4)
Small business finance	68.3	82 (4)
Leadership	80.2	81 (5)
Pitching	51.3	76 (10)
Networking	56.8	81 (5)
Coaching	30.3	76 (10)
Mentoring	43.2	81 (5)
Marketing	79.1	86 (0)
Business research methods	91.8	85 (1)
ICT/website/e-commerce	52.5	80 (6)
Social media	36.7	79 (7)
Social entrepreneurship	53.2	79 (7)
Intrapreneurship	55.9	68 (18)
Entrepreneurial strategy	86.6	82 (4)
Female entrepreneurship	36.4	77 (9)
Internationalisation	74.0	77 (9)
Innovation	81.0	84 (2)
Growth	78.5	79 (7)
Bricolage/resourcefulness/effectuation	34.9	63 (23)
Entrepreneurial environment assessment	63.3	79 (7)

Table II. Entrepreneurship education course content

The least frequently recalled aspects (circled on Table 2), may have been related to less "*distinctive or memorable elements*" of their EE experience, but do perhaps indicate areas for reinforcement or improvement in EE delivery. Much attention has been paid in related research around the gender imbalance of enterprise activity, favouring men over women (Deacon & Harris 2011, Invernizzi *et al.*. 2016) with Nowiński *et al.* (2019), finding that females tend not to perceive themselves as having an "*entrepreneurship identity*" (page 373) even though they may benefit most from EE. This paradox should make us question how we can align EE and enterprise development support towards gender bias needs? Interestingly, and perhaps disappointingly given the amount of literature discussing the value of "effectuation" (Sarasvathy *et al.*, 2014), this was weakly recalled, even though further analysis identified this "*was regarded as a key driver of EE satisfaction within all organisational contexts*" (page 700) and recommended further research is recommended to evaluate "*the retrospective value students give to theoretical concepts such as effectuation following graduation*" (2017, page 692). Clinkard (2018) agrees that effectuation generates far less tangible or perceptible outcomes such as "*personalised development… changes in identity, self-awareness, adoption of a lifelong learning approach and a growth mind-set*" (page 376).

Perhaps, however, these lower recalled aspects occur at a subconscious level rather than having no effect, such as potentially indicated in Table 3 below, listing 5 key EE outcomes? Relatedly, Jones *et al.* (2017) results showed the strongest correlated effect of an EE course was on "*General Enterprising Behaviour*". But how did these alumni respondents identify that their behaviours had changed? It would therefore be useful to explore this further with a larger sample and additional populations from other (comparable) countries, including a control group, to enhance the validity and reliability of inferences drawn.

Table 3: Impact of Entrepreneurship course, Jones *et al.* (2017), page 698.

Table III. Impact of entrepreneurship course

Impact on	Small positive impact %	Very positive impact %	Not relevant (defined as missing)
Self-employment	35.0	48.3	26
Intrapreneurial activities	36.7	38.3	26
General activities in organisation have been employed in	42.9	35.7	16
Entrepreneurship support activities	36.5	47.3	12
General enterprising behaviour	37.0	53.1	5

In their longitudinal study of MA Business Enterprise Development students, Deacon and Harris (2011) observe *"how and when learning/development takes place is less easy to define and measure in entrepreneurial students, perhaps due in part to the holistic nature of skill attainment within entrepreneurship education*", page 604. Their findings are mirrored in subsequent research; highlighting the many nuances, variables, contextual and situational factors which may influence how EE may affect outcomes. Their mixed methods research (involving thematic analysis of interviews) identified how entrepreneurial skills are associated with a 'lifelong learning' attitude and that aspiration was strongly linked with confidence and the ability to rationalise opportunities. Another interesting finding, given the academics leading the course were active entrepreneurs and the methods of teaching were action based and 'learning by doing', was the observation of "*synergistic benefits*" of the reflexive community that emerged between students and tutor team (page 609). This particular sample however were MBA, mature students, already working within small firms and were being sponsored for the majority of their first years' fees from a public body, were interviewed by the teaching team and there was no control group, which may introduce sample bias.

Whilst partially unsurprising due to their sample of IT students working on a year-long placement within a large firm, Galloway *et al.*'s (2014) study identified little entrepreneurial aspiration or confidence, notwithstanding 20% had received some form of EE in their course. Using a comparable research design, they concluded that "*a longitudinal study following students from placements, through first entry and into established careers would also be enlightening in terms of reflecting on how and where employability (and enterprise) skills are most developed, and indeed, to investigate the experiences of both employment and self-employment in terms of the deployment of these skills*" (page 665). Yet Galloway *et al.* (2015) warn how the sharp end of high (unexpected) attrition rates directly

impede the ability to collect longitudinal data. Although Jones *et al.* (2017) attempted to address this by surveying respondents many years past their EE experience, Galloway *et al.* contend "*retrospective studies – studies that investigate events and experiences post hoc – can go some way to explaining events and experiences, but these have been identified as limited in that they rely too heavily on what actors claim in retrospect*", page 491. They recognise the challenges of attempting to capture antecedents of human activity and the likelihood of this being heavily influenced by dynamic contexts peculiar to the respondents which in turn, generates observation bias, hence recommending deployment of social science research methods. They helpfully provide a summary of selected longitudinal studies (up to the point of publication) which focus on "*entrepreneurial intentions*". Each was quantitative and experienced high attrition rates between the starting and continued sample, but attempted to address this by adapting their research design in order to enable more robust competitive analyses.

So should research explore both when and how entrepreneurial skills may be being used after graduation, as well as when they may be being delivered or developed during the course of study? In the case of studies where 80% of students had not received any explicit EE in their course content, we can see that students are graduates do develop some of these skills, yet the gains are not as impactful with explicit EE exposure (Chevalier *et al.*, 2009; McGrath *et al.* 2015).

Pertinent findings

"*Employability metrics are publicly available data and as such may have an effect on higher education institution (HEI) reputations, retention rates and course demand… [yet] scrutiny and focus on achieving against these metrics can create responses and activities which may, ironically, be contradictory or unhelpful towards achieving intended objectives (Holmes, 2013a)",* Clinkard, (2018, p375).

Through critical reviews of pertinent literature and models, the author's previously published work (Clinkard, 2018; Fletcher-Brown *et al.*, 2015; Knibbs, 2015), explored the link between enterprise education input and employability outcomes, and debated the effectiveness of HE first destination metrics at capturing E&E outcomes of the HE experience. These culminated in the proposal of the "employaGility" concept and subsequent AGILE self-reflection tool, where students are encouraged to create a reflective narrative of their E&E related development against: Adaptable, Gatherer, Identity Awareness, Life-Long Learning and Enterprising capabilities. (*See Appendix 1 for further details).*

The author argues that use of the AGILE model could "*offer a student-generated glossary of terms which could be used to help them develop a narrative of E&E gains, [to]enhance how they portray themselves for employers or as self-employed professionals*" (Clinkard, 2018, p387) and recommended that empirical research be conducted. Hence, the AGILE tool has been adapted for cloud capturing (via Google forms), which enables students to populate their own record; see what other students have written and, critically, staff (with permission); can collate and compare the language and terms used in entries, generating a 'semantic glossary' of terms, as a basis for thematic analysis research. This 'glossary' could further be used to ensure definitions of employability and enterprise are described in student-friendly terms. By encouraging students to revisit this record over time (for

example, each academic year, as part of personal and professional development discussions), students can reflect on achievements against each dimension and identify gaps for improvement not just at one point, but for as long as they wish, even after their time in HE (Clinkard, 2018).

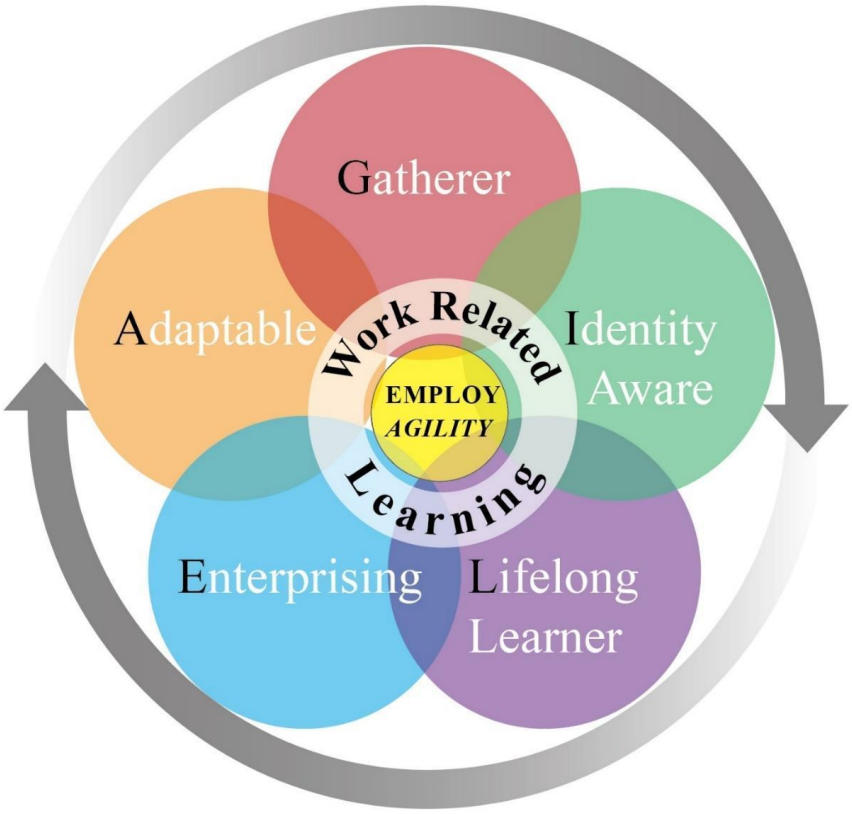

Figure 5 – The AGILE employagility model – Clinkard (2018), p385

Summary: the need for research

Many studies feature case responses from a single country or university setting, leaving room for further contextualised research. What is clear from Jones *et al.*'s (2017) informed advice, is that researchers adopting a longitudinal approach have to face the reality of low respondent numbers. Social media such as LinkedIn with its searchable alumni lists certainly have a far greater future role in supporting efforts to make contact with respondents. For this reason, they suggest that far greater

value can be gained from qualitative studies involving fewer respondents, enabling deeper insights from a few case examples.

Previous research also highlighted weaknesses in short-term metrics of the value of higher education in broader terms of employability, as well as more specific EE course enterprise outcomes. In order to address the research needs identified, the following research was conducted.

3. RESEARCH APPROACH

This paper reports after AGILE has been implemented as a teaching and learning device with cohorts of undergraduates over the past two academic years, which has generated a bank of associated primary data. Qualitative and quantitative data were gathered from approximately 300 Undergraduate students at a UK business school, using the AGILE self-reflection tool (Clinkard, 2018). The quantitative data are evaluated here, to investigate initial correlations between gender, nationality, subject and level studied and exposure to enterprise education (EE), as variables, affecting E&E development.

Research Questions

This paper aims to contribute to knowledge by evaluating the perceived value of the 'AGILE' mindset as a learning teaching tool, by addressing:

1) Are there relationships between respondent demographic characteristics (such as gender, nationality, subject studied, level of study, exposure to enterprise education) and self-reported AGILE outcomes?
2) Could quantitative evaluation inform how AGILE is taught/delivered/supported?
3) Could AGILE offer insights for improving HE E&E outcome metrics?

Method

The AGILE self-reflection tool is explained to first year (N:450) and second year (N: 135 x 3 cohorts, 405) undergraduates (including two control group programmes, who do not have any explicit enterprise education, approx. N45 x 3, cohorts, 135) as part of a for-credit, taught module, with student responses (L4:N66,; L5 N:210) collected via an online Google form survey. Firstly, students are asked to rate themselves on a 1-5 Likert scale against each of the AGILE elements, after lecture and seminar instruction, explaining the key terms and definitions. Then they provide verbatim narrative of relevant examples which they feel demonstrate how they achieved this rating / score. It is a process the author calls 'celebrating small wins' and is aligned to the STAR (Situation, Task, Action, Result) framework (Hepworth *et al.* 2015) recommended to students by the HEI's central Careers and Employability service. Appropriate ethical consent was provided by the host HEI.

Context

First year students enter AGILE responses during seminar activities, which is not assessed, as part of a common first year module, explicitly oriented towards developing an enterprising idea (new business venture/innovation). Second year students conduct AGILE reflection as part of an assessed portfolio of exercises, aimed at helping them explore their future employability, at a time when many are applying for one year Placements.

Analyses

Mixed methods response data were collected into spreadsheets and transferred into SPSS, where mean ratings for each of the AGILE elements were compared against variables such as age, nationality, gender, subject studied, level of study, exposure to EE and whether AGILE was assessed or not. Bivariate, ANOVA, and Tamhane post hoc quantitative significance tests were applied. Qualitative, verbatim expressions of AGILE examples, submitted as reflective narrative responses, were analysed via an online (Google sheet 'add-on') text classification tool (MeaningCloud). This produced 16 computer generated themes which will be further explored in subsequent research, to provide a deeper evaluation of the terminology used, to assess the potential value of the AGILE learning tool. For the purposes of this current paper, the initial bivariate analyses and related quantitative findings are provided below.

4. INITIAL FINDINGS

N.B. Ratings are self-reported by students

Table 4 shows that mean ratings for all AGILE elements were statistically significant (except Life-Long Leaner) by Age. In some aspects, the youngest respondents self-reported higher scores than the average total, whilst older students scored themselves higher on all elements bar 'Adaptable'. Of course, in real terms, the age differences are not that wide and there are imbalanced numbers of respondents in each boundary. Interestingly, previous studies such as by Invernizzi et al. (2017) found evidence of over-stating and over-confidence of youth vs. realism of maturity. If this is the case, then self-reported AGILE scores would be expected to go down as students' progress to the next level of their course, which creates a paradoxical situation; arguably, another year's worth of study, work (possibly) and/or extra-curricular experience, should provide 'older' students more examples to draw upon in their narrative!

Table 4: SPSS results, bivariate ANOVA analysis of mean AGILE ratings by Age

TABLE 4: by Age		N (Number of responses)	Mean AGILE rating	Std. Deviation	ANOVA Sig.	Sig. star rating
Rate ADAPTABLE	18-19	157	3.43	1.027	0.019	**
	20-21	73	3.03	1.040		
	22+	14	3.21	0.699		
	Total	244	3.30	1.029		
Rate GATHERER	18-19	157	2.88	0.922	0.008	***
	20-21	73	2.59	1.065		
	22+	14	3.43	1.342		
	Total	244	2.82	1.009		
Rate IDENTITY AWARE	18-19	157	2.97	1.149	0.031	**
	20-21	73	2.58	1.117		
	22+	14	3.14	1.099		
	Total	244	2.86	1.149		
Rate LIFE LONG LEARNER	18-19	157	3.03	1.034	0.137	ns
	20-21	73	2.88	1.213		
	22+	14	3.50	0.941		
	Total	244	3.01	1.090		
Rate ENTERPRISING	18-19	157	2.65	1.132	0.029	**
	20-21	73	2.38	1.126		
	22+	14	3.21	0.975		
	Total	244	2.60	1.134		
Note: fewer N# respondents in older age groups						

In addition to the ANOVA test, a Tamhane post hoc test was run, to compare the unequal sample sizes of each age group against one another. The results show the following significance of unequal variances.

Table 5: Tamhane post hoc test of means by Age groups

Multiple Comparison: Tamhane							
Dependent Variable			Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Rate ADAPTABLE	**18-19**	**20-21**	.406*	0.147	0.019	0.05	0.76
		22+	0.219	0.204	0.653	-0.32	0.75
	20-21	**18-19**	-.406*	0.147	0.019	-0.76	-0.05
		22+	-0.187	0.223	0.795	-0.76	0.38
	22+	**18-19**	-0.219	0.204	0.653	-0.75	0.32
		20-21	0.187	0.223	0.795	-0.38	0.76
Rate GATHERER	**18-19**	**20-21**	0.290	0.145	0.135	-0.06	0.64
		22+	-0.550	0.366	0.398	-1.54	0.44
	20-21	**18-19**	-0.290	0.145	0.135	-0.64	0.06
		22+	-0.840	0.380	0.120	-1.85	0.17
	22+	**18-19**	0.550	0.366	0.398	-0.44	1.54
		20-21	0.840	0.380	0.120	-0.17	1.85
Rate IDENTITY AWARE	**18-19**	**20-21**	.399*	0.160	0.040	0.01	0.78
		22+	-0.168	0.308	0.932	-0.99	0.65
	20-21	**18-19**	-.399*	0.160	0.040	-0.78	-0.01
		22+	-0.568	0.322	0.257	-1.41	0.28
	22+	**18-19**	0.168	0.308	0.932	-0.65	0.99
		20-21	0.568	0.322	0.257	-0.28	1.41
Rate LIFE LONG LEARNER	**18-19**	**20-21**	0.155	0.164	0.721	-0.24	0.55
		22+	-0.468	0.265	0.261	-1.17	0.24
	20-21	**18-19**	-0.155	0.164	0.721	-0.55	0.24
		22+	-0.623	0.289	0.121	-1.37	0.12
	22+	**18-19**	0.468	0.265	0.261	-0.24	1.17
		20-21	0.623	0.289	0.121	-0.12	1.37

Rate ENTERPRISING	**18-19**	**20-21**	0.266	0.160	0.266	-0.12	0.65
		22+	-0.565	0.276	0.162	-1.30	0.17
	20-21	**18-19**	-0.266	0.160	0.266	-0.65	0.12
		22+	-.831*	0.292	0.029	-1.59	-0.07
	22+	**18-19**	0.565	0.276	0.162	-0.17	1.30
		20-21	.831*	0.292	0.029	0.07	1.59

*. The mean difference is significant at the 0.05 level.

We can see significant variance in ratings of Adaptable and Identity Awareness between 18-19 year olds and 20-21 year olds, with Enterprising showing more variances at the higher end of the age grouping. Considerations of what may stimulate these variances are discussed below.

Female respondents scored themselves higher in all elements except 'Enterprising', but the data are not statistically significant (non-significant data were also found by nationality hence that table is not provided). These findings correlate with the earlier discussion of Deacon & Harris (2011), Invernizzi *et al..* (2016) and Nowiński *et al.* (2019). Perhaps this indicates a need to broaden the interpretation of enterprising and entrepreneurial employability routes (including intrapreneurialism) and develop female confidence to pursue such opportunities through exposure within curricula, to reduce the perception of associated risk? After all, past research also finds when females do engage in enterprising activities, their success rates are higher than males (Invernizzi *et al.* 2017).

Table 6: SPSS results, bivariate ANOVA analysis of mean AGILE ratings by Gender

TABLE 6: by Gender		N	Mean	Std. Deviation	ANOVA sig.	Sig. star rating
Rate ADAPTABLE	**Female**	112	3.41	1.000	0.119	**ns**
	Male	132	3.20	1.047		
	Total	244	3.30	1.029		
Rate GATHERER	**Female**	112	2.88	1.058	0.466	**ns**
	Male	132	2.78	0.968		
	Total	244	2.82	1.009		
Rate IDENTITY AWARE	**Female**	112	2.88	1.179	0.898	**ns**
	Male	132	2.86	1.127		
	Total	244	2.86	1.149		
Rate LIFE LONG LEARNER	**Female**	112	3.10	1.131	0.258	**ns**
	Male	132	2.94	1.054		
	Total	244	3.01	1.090		
Rate ENTERPRISING	**Female**	112	2.52	1.185	0.284	**ns**
	Male	132	2.67	1.088		
	Total	244	2.60	1.134		
Note: N:267 responses in total, some gender data missing						

The number of hours used to teach AGILE appears to have a strong effect: the higher the hours, the higher the likelihood of elevated AGILE ratings. This supports that AGILE is a developmental process which benefits from deeper exposure in order for students to identify related experiential examples.

Table 7: SPSS results, bivariate ANOVA analysis of mean AGILE ratings by Hours taught

TABLE 7: by taught Hours		N	Mean	Std. Deviation	ANOVA Sig.	Sig. star rating
Rate ADAPTABLE	1 lecture 1 seminar	152	3.07	1.004	0.000	ns
	2 lectures 1 seminar	124	3.67	0.926		
	Total	276	3.34	1.013		
Rate GATHERER	1 lecture 1 seminar	152	2.61	1.004	0.000	ns
	2 lectures 1 seminar	124	3.23	0.918		
	Total	276	2.88	1.013		
Rate IDENTITY AWARE	1 lecture 1 seminar	152	2.61	1.175	0.000	ns
	2 lectures 1 seminar	124	3.28	1.032		
	Total	276	2.91	1.161		
Rate LIFE LONG LEARNER	1 lecture 1 seminar	152	2.76	1.108	0.000	ns
	2 lectures 1 seminar	124	3.46	0.932		
	Total	276	3.08	1.088		
Rate ENTERPRISING	1 lecture 1 seminar	152	2.34	1.092	0.000	ns
	2 lectures 1 seminar	124	3.11	1.106		
	Total	276	2.69	1.162		

Next, when AGILE is assessed it presents significant differences for Gatherer, Life-long Learner and Enterprising, (but not for Adaptable and Identity Awareness). So, if we assume this is not due to a taught effect, why is there variance? Some researchers point towards differences between personality traits (Sanchez 2013), proactive dispositions (Tymon 2013), competencies and self-

efficacy (Sarasvathy *et al*. 2014), with many citing contradictions in data when attempting to measure trait impacts on EE (Lyons *et al.* 2015). These authors posit that adaptability (being versatile, creative) and identity (a source of human capital, Tomlinson 2017), are more aligned to innate psychological traits, hence less malleable and harder to learn. Lyons *et al.* (2015) further recommend avoiding "*ambiguity in definition and measurement*" (page 142), with Guan *at el* (2017) drawing links between personality and language proficiency, which infers a need to use clear, student-friendly terminology and perhaps coaching and mentoring techniques in teaching, to help students navigate associated narrative development.

Guan *et al's* (2017) work looks at the mediating effect on 'career adaptability' of big 5 personality traits, approach/avoidance behaviours, proactive personality and learning goal orientation, finding that extraversion has a strong direct effect. So is this the key behind the differences? With only 32.6% of the UK population going to University (UCAS 2017) it is impossible to draw inference of how many extroverts are in the sample, yet intriguing new evidence in the field of psychology illustrates how intra-/extraversion are both minority personalities compared with "ambiversion" whereby people respond from within (motivation) and in relation to external stimuli (context), leading to variance (Soliven 2019).

Table 8: SPSS results, bivariate ANOVA analysis of mean AGILE ratings where it is assessed

TABLE 8: was AGILE assessed?		N	Mean	Std. Deviation	ANOVA Sig.	Sig. star rating
Rate ADAPTABLE	**Yes**	210	3.32	1.034	0.530	**ns**
	No	66	3.41	0.944		
	Total	276	3.34	1.013		
Rate GATHERER	**Yes**	210	2.95	1.015	0.045	**
	No	66	2.67	0.982		
	Total	276	2.88	1.013		
Rate IDENTITY AWARE	**Yes**	210	2.96	1.144	0.181	**ns**
	No	66	2.74	1.207		
	Total	276	2.91	1.161		
Rate LIFE LONG LEARNER	**Yes**	210	3.15	1.096	0.037	**
	No	66	2.83	1.032		
	Total	276	3.08	1.088		
Rate ENTERPRISING	**Yes**	210	2.77	1.173	0.046	**
	No	66	2.44	1.097		
	Total	276	2.69	1.162		

Other possible explanations could centre around the difference of module focus: i.e. the 66 non-assessed first years were taking an overtly enterprise related module, whereas second years (201) were studying an Employability development module.

Table 9: SPSS results, bivariate ANOVA analysis of mean AGILE ratings by Level

TABLE 9: by Level		N	Mean	Std. Deviation	ANOVA Sig.	Sig. star rating
Rate ADAPTABLE	**Level 4**	66	3.41	0.944	0.530	**ns**
	Level 5	210	3.32	1.034		
	Total	276	3.34	1.013		
Rate GATHERER	**Level 4**	66	2.67	0.982	0.045	**
	Level 5	210	2.95	1.015		
	Total	276	2.88	1.013		
Rate IDENTITY AWARE	**Level 4**	66	2.74	1.207	0.181	**ns**
	Level 5	210	2.96	1.144		
	Total	276	2.91	1.161		
Rate LIFE LONG LEARNER	**Level 4**	66	2.83	1.032	0.037	**
	Level 5	210	3.15	1.096		
	Total	276	3.08	1.088		
Rate ENTERPRISING	**Level 4**	66	2.44	1.097	0.046	**
	Level 5	210	2.77	1.173		
	Total	276	2.69	1.162		
Note: sig.scores same as by Gender due to AGILE ratings constant						

Another consideration here is that first years study a common set of modules across the business school, which might have an influence on programme level 'Identity'. The findings by Level also generally support the more experienced the student is on the programme (hence older), the higher they score themselves, yet the same two aspects of Adaptable and Identity Awareness do not show significant variance.

From this we could develop a hypothesis:

H1 Age, level of study and assessment have a positive effect on AGILE self-reported scores

but the rating means often go in the opposite direction! This could imply that something is happening between the first and second year of their programme which negatively affects perceived Adaptable and Identity Awareness scores. Could this be the effect of the 'common first year' (where the majority of business school undergraduate programmes share introductory modules e.g. Economics, Accounting, Marketing, Human Resources, Operations, Statistics and academic skills) which may be negatively affecting perceived "programme identity" compared to the second year subject specific experience? Tomlinson (2017, 2010) is an advocate of identity development as a form of social capital, which requires a process of doing, interacting and sense-making in order for students to develop a sense of agency, "*rather than passively slotting into a pre-existing social order*" (p82: 2010). This points towards a need to consider **Level** based learning E&E outcome mapping, (rather than those stated at holistic **programme** level only).

It is important to remind ourselves at this juncture however, that AGILE is not discreetly aimed at stimulating entrepreneurial intention (unlike models explored by cited authors), but more broadly encourages students to consider a range of future employment options which interface with enterprise (e.g. graduate role/ internships with large or small firms, self-employment, freelancing and intrapreneurship etc.).

5. CONCLUSIONS

"*Graduates need to be aware of, and able to reflect on, how changes in the employment, working and start-up landscape are likely to affect their exit trajectory and alter their approach accordingly (Leibowitz, Ndebele, and Winberg, 2014). This involves switching jobs, employers and career paths several times (Marginson, 2014), which is not currently effectively tracked through cross-sectional exit destination data (HESA, 2016); Geneva ILO, 2017)*", Clinkard (2018, p381).

The review highlights important inter-relationships between employability development and enterprise education and how these could influence related graduate level outcomes (Clinkard, 2018), whilst suggesting weaknesses of existing metrics inadequately capturing nuanced benefits of exit trajectories including freelancing, self-employment, working in SMEs or start-up activity (Holmes, 2013). Evaluation of empirical insights using the AGILE reflective tool indicates self-reported scores generally increase as students' progress through levels of their course except for Adaptability and Identity awareness concepts, which might either be more fixed-trait related

elements, or be more difficult for students to interpret and require greater supported learning to develop.

Recommendations

A range of possible recommendations for developing E&E curricula, delivery and support could include:

1) Increasing the number of taught hours explaining AGILE as this may have a positive effect on nascent AGILE development. As part of tutor/employability service personal development planning, students could revisit their AGILE reflection repeatedly over time, adding new examples which might stimulate broader thinking around current and future exit E&E routes.
2) Programme Leaders identifying in specification documents and learning outcome maps, how students may achieve E&E progression by LEVEL.

Future research

1) Ideally, AGILE development would be tracked longitudinally again key E&E outcome metrics, to establish any tangible gains.
2) Subsequent research will explore qualitative insights from AGILE verbatim responses to:
   a) identify nuances between themes from text classification derived by automation compared with human data analysis, via regression and factor analyses,
   b) evaluate how effectively AGILE is explained, understood and utilised (ie student-friendly terms) or if terminology related to E&E teaching and support need revision
   c) establish whether the AGILE model elements are confirmed as one single construct.

It is hoped the process of exposing students to AGILE reflection for personal and professional goal setting could bring such rewarding benefits as improved self-confidence, proactivity and resilience, shared E&E passion, self-efficacy and improve the desirability of alternative routes to employability and enterprise.

Limitations

"*…if researchers constantly devise new measurement instruments, rather than selecting the most valid from prior work, there will never be astute research consensus*" (Lyons *et al*, page 153, citing Shook *et al..* 2003).

The current paper only looks at the initial quantitative data, verbatim responses are yet to be explored. The data are from a limited sample, from a single case UK University Business School. It is hoped AGILE will be adopted and used in further case HEIs nationally and internationally, in other programmes, especially professionally oriented subjects, to promote E&E related learning with subsequent data used to explore what value it may have for improving E&E outcomes or how these can be measured at the individual level.

APPENDIX 1

Condensed version of Student guidance notes developed for seminar teaching for AGILE.

What does each element mean?: *(adapted from Clinkard (2018), Industry and Higher Education).*

Adaptable – provide a brief description of up to 5 times where you've been resilient; had to be flexible, adapt to changes, bounce back or overcome a challenge (personally, at school/ college, in a workplace setting or for a hobby/sport/ competition).

Gatherer – how good are you at 'networking? In a room full of strangers, can you approach new people confidently, how comfortably do join up with others to work in teams, do you belong to various clubs, societies or have a common passion/interest? Describe briefly, times where you've sought out advice, information or support; when you've gained the trust of others to invest their time, money, use of equipment or energy to help you out; what did they gain in return?

Identity-Aware – who are you and how are you perceived by others? What makes you unique? How often do you take stock of how you've developed as a person? This involves looking at communities, friendship groups and clubs you've belonged to over time; are you still the same person you were 1, 2, 3 or more years ago? What has changed in the ways in which you approach different situations? Make a list of the things you're good at and achievements you've gained in any aspect of life. What personal qualities, behaviors and attitudes did you use in situations which lead to you doing something well?

Life-Long Learner – means a person who proactively seeks out opportunities to learn from any situation (either consciously or subconsciously!). What about you? Provide examples where you've gone from being not so good at something, not knowing something / someone, to becoming more confident and being part of a success story, what did you gain from it? It is particularly useful right now, to list out in the bottom "Reflections" row anything you think you'd like to learn more about, or try as a new activity – set yourself an action to do it!

Enterprising – This doesn't just mean any time you've started some kind of entrepreneurial venture or been in a competition; people with an enterprising mindset tend to be opportunity aware; they are creative, innovative and good at problem solving. What about you? Sometimes, great things come out of pure chance, other times they require taking a well-judged risk. Provide details of times when you've recognized when there was a chance to do something to improve a situation, which might have involved actively seeking out things you needed to overcome an issue (alone or with others).

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DIGITAL GREEK START-UPS – AN ANALYSIS OF FOUNDER'S PERCEPTIONS

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ABSTRACT

The study examines the perceptions of I.T. Greek Start-Ups participating in Digital Greece 2018, organized by the Greek Ministry of Digital Policy, Telecommunications and Media. The study examines a total of 94 I.T. Start-Up founders, using quantitative research method, with the use of structured questionnaire for primary data collection. The study offers an overview of innovation management in Greece in the form of I.T. Start-Ups, since all participating teams attended entrepreneurial education courses by participating in accelerator's programs.

Statistical Analysis revealed positive correlation between B2B start-ups and use of technology as competitive advantage, and negative correlation between B2B and founder's feeling of success. Furthermore there are correlations between Education and development of disruptive solutions, and between education and the identification of the challenges to improve their solutions and get more customers. There is negative correlation between number of founders and Intellectual property, as well as between number of founders and creation of new markets. Finally there is positive correlation between experience and the need to secure funding.

Finally, the study examines I.T. start-up founders perceptions operating in a negative macroeconomic environment, since Greece experienced a major economic decline between 2008-2018.

KEYWORDS: Innovation Management, Marketing, Start-Ups, Founders, Business Models, Entrepreneurship, Strategy, Greek

JEL CLASSIFICATION CODES

L26, M13, O30, O31, O32, O33

1. BACKGROUND INFORMATION

The study examines the Greek start-up ecosystem, with a special focus on companies engaged in Digital solutions (ICT sector). The objective of the study is to enhance the understanding of the Digital Start Ups in Greece, by analyzing the founders' views, strategy, and current perception regarding their ICT start-ups. The study focuses on the Greek Start-Ups participating in Digital Greece 2018. Digital Greece Event was hosted for the first time during the 83rd Thessaloniki International Trade Fair, from Sept. 8th to Sept 16th 2018, organized by the Greek Ministry of Digital Policy, Telecommunications and Media. The event, offered to top Greek start-ups the opportunity to demonstrate their solutions to potential investors, customers and the general public.

It should be noted that all participating start-ups have reached particular high levels of maturity at least in terms of business perspective, by participating at least in one start-up boot camp or start-up accelerator program, operating in Greece. For this reason, their founders have received at least basic training regarding all aspects of establishing and managing a start-up company, such as company formation, product design, market selection, human resources, negotiations, and pitching to potential investors. From this point of view, the sample consists of start-up founders that have successfully entered into at least one start-up training program, and therefore are considered to be trained on the business and managerial aspects of running a start-up company.

Furthermore the Greek macroeconomic and business environment in which Greek ICT start-uppers are trying to develop their business activities is not an easy one for new – or for existing – business. The austerity measures, since 2010 resulted to an economy with high unemployment and levels poverty, frequent changes in taxation and dramatic cuts of income level for the majority of population; as a result numerous well-known and established companies have left the market.

2. RESEARCH APPROACH & METHODOLOGY

The literature review examines the key success factors for new companies, especially start-ups. The research focused on Quantitative analysis; Quantitative Analysis is used in order to identify relationships based on numerical data deriving from a large sample; therefore in order to identify relationships between pre-determined variables, from a predefined sample, with the ability to provide findings that can be used as a prediction of the behavior of the general population (Apuke, 2017). Academic studies highlight the benefits of survey research: "The use of survey research designs is a common approach in a great deal of applied research as this is a method that can yield a large amount of data despite the typical constrains of data collection in field settings, specifically limited financial resources, assistance and time." (Picardi et al, 2014, p. 137)". More specifically, correlation analysis, a quantitative research method, is used for explanatory research, in order to explore the extents to which some variable co-vary; where changes in one variable result change in the other (Cresswell, 2008).

The research questionnaire was designed as a structured and validated instrument of data collection, based on key findings of the previous academic literature examined. The research involves primary research and the use of structured questionnaires. Several factors were considered for primary data collection, in order to maximize efficiency and access to the population (I.T. start-up founders). Aguado (2009) highlights the importance and difficulties of primary data collection and use of questionnaire.

Furthermore, Baxter et al (2008, p. 547) highlight the importance of establishing inclusion and exclusion criteria for sample selection in a quantitative study. To this respect the population was clearly defined as founders of the I.T. start-ups who participated in the Digital Greece 2018 event. This choice satisfied several selection criteria – a well defined population and industry section (start-up founders of I.T. companies), and a basic background of entrepreneurial and managerial education through participation of the founders in start-up accelerators events. Start-up founders engaged in other sectors (not I.T.) and other organizations (such as participating accelerators, Venture Capital Companies and Public Organizations) were excluded from the research.

The questionnaires were distributed to the population on site. More specifically 94 questionnaires were distributed, on site, to the founders of the startups, and were collected immediately upon completion; in case of more than one founder available on site, each founder had to fill-in the questionnaire alone, with no contact with any co-founder or any other team member. Considering the critical success factors and key variables for performance of start-ups, the study examines a wide range of variables, both from the founder's perspective (such as age, education, prior experience and previous ventures) and start-up organizations perspective (key achievements, main challenges, sources of competitive advantage, disruption and degree of innovation introduced).

"A goal for all researchers regardless of discipline is to yield data findings in support of the predicted correlations or causal relationships as stated in the hypotheses." (Picardi et al, 2014, p. 196). To this respect, the data were encoded and advanced statistical analysis software (SPSS) was used in order analyze the correlation between variables, with the use of Pearson Correlation Coefficient. Isotalo (2014) provides the framework of Statistical Correlation Coefficient Analysis. Correlation analysis provides "a quantitative methodology used to determine whether, and to what degree, a relationship exists between two or more variables within a population (or a sample)." (Apuke, 2017, p. 44). Correlation is used in order to investigate the possibility of a linear relationship between two (or more) variables examined.

3. LITERATURE REVIEW

Academic literature review provides a wide range of factors that can determine the success of start-up companies. This study provides an in-depth analysis of some of the most promising Greek ICT start-ups by examining a wide range of factors, such as previous experience (professional and entrepreneurial), education, number of founders, company achievements and challenges, competitive advantage, strategic alliances.

Entrepreneurship has been defined as "the process of creating something new with value by devoting the necessary time and effort, assuming the accompanying financial, psychic, personal and social risk, and receiving the resulting rewards" (Hisrich, Peters, & Shepherd, 2008; p. 8). It is therefore important to study the perceptions of start-up company founders. Previous studies (e.g. Nieuwenhuizen et al, 2002) focused on personal traits of the founders. In today's competitive environment, these factors are considered a prerequisite for success, and in any case, are covered by education received within an acceleration program.

Mueller (2007) argues that for developed economies, start-up investment, innovation and knowledge have a higher impact for developed economies. This appears to be reasonable; innovations developed by start-up companies have a greater, easily accessible domestic market to access both funds and customers, and usually far more advanced technological infrastructure, making it much easier to approach potential customers, with their solutions. What is even more important, customers in developed markets tend to be more demanding and able to define problems in a clear way, providing clearer feedback and product roadmaps to local start-uppers.

Previous academic studies examine a wide range variables related to pre-startup success. "The first variable related to pre-startup success is perceived risk of the marketentrepreneurs who intend to use more start-up capital have lower probabilities to get their business running…. entrepreneurs wishing to start out in manufacturing have a higher probability of success". (Gelderen et al, 2003, p.11). An additional study (Song et al, 2008) summarizes previous academic literature and highlights the role of competition, prior start-up experience, size of founding team, research and development (leading to Intellectual Property rights) and product innovation. More specifically the study's meta-analysis revealed 24 metafactors related to the performance of NTVs. (Song et al, 2008, p.11), among them size of founding team, Alliances and partnerships, experience, Firm age, prior start-up experience, product innovation, market knowledge and competition. The study's findings suggest that acquiring more experience in marketing and industry may lead to higher NTV performance … "may be further evidence of overestimation of the role of prior start-up experience" (Song et al, 2008 p.16), "firm age, size of founding team, and patent protection also contribute to a venture success..." "A remarkable finding of this study was that the R&D investments were not a success factor (much like product innovation, mentioned earlier)." (Song et al, 2008 p.17).

More recent studies based on Data mining attempt to create predicting models based on data mining (Krishna et al, 2016), by developing mathematical models regarding key start-up milestones. Further research regarding the role of gender in entrepreneurship does not provide a clear conclusion. Wilde and Leonard (2018 p.146-147) summarize previous research "gender did not emerge as significant in both Meager, Bates, and Cowling's (2003) and Muraina et al.'s (2012) research, a substantial body of research demonstrates that gender has a powerful influence on entrepreneurship (Johansen 2013). Women often have very different aspirations for their businesses than men, often due to family roles and responsibilities (Walker and Webster 2007; Nordenmark, Vinberg, and Strandh 2012; Johansson Sevä and Öun 2015). For example, women may want a stable, small business, enabling balance between their home and working lives and flowing from their beliefs and values (Green and Cohen 1995; Marler and Moen 2005; Bunk et al. 2012; Hilbrecht and Lero 2014; Bögenhold and Klinglmair 2015); perhaps explaining Elam's finding (2014) that women are less likely to start businesses and, when they do, start very different businesses to men."

Another important finding is that entrepreneurs have a greater ability than non-entrepreneurs to recognize, discover, and create opportunities in their environments (Baron, 2007). Cognitive and behavioral research suggests two reasons for this finding. First, entrepreneurs have larger and more diverse social networks than non-entrepreneurs, which provide a better conduit of information about opportunities (Renzulli, Aldrich, & Moody, 2000). Second, entrepreneurs are better at pattern recognition (Baron, 2007), which may serve as a proxy for opportunity recognition. (Deldford et al, 2014, p. 433)

Obschonka et al, (2011) highlights both early precursors of entrepreneurship and the development of entrepreneurship in general and entrepreneurial success in particular over the lifespan, while further study (Schoon et al, 2012) concludes that for both genders, decision to become an entrepreneur was associated with social skills and entrepreneurial intentions expressed at early years (age 16), and linked to gender-specific pathways. For men, becoming an entrepreneur was predicted by having a self-employed father; for women, it was predicted by their parents' socioeconomic resources.

(Pena, 2012) concludes that the human capital of the entrepreneur (i.e. education, business experience and level of motivation), organizational capital (i.e. firm capacity to adapt quickly to changes and the ability to implement successful strategies), and relational capital (i.e. development of productive business networks and an immediate access to critical stakeholders) are important intangible assets, which seem to be related positively to venture performance.

Jong &Marsili (2006) examine the patterns of innovation, especially in terms of start-ups engaging in radical innovation. Further study (Timmermans et al., 2010) examined the success of start-ups based on technology innovation breakthroughs concluded that only 67% of this type of company survives after 5 years (Netherland). The study concluded that success ratio of radical technological innovation is similar or below of more traditional technological start-ups, which base their advantage on other factors.

Groenewegen et al, (2012) summarize findings of previous studies. “Several factors are mentioned as success factors for a starting firm, although these factors are not undisputed. Rauch (2000) and Brem (2008) found that the number of years of working experience is a success factor for a starting firm. Brem (2008) and Nandram & Boemans (2001) found that the willingness to take risks is a success factor. Brem (2008) and Rauch (2000) contradict each other about “being part of a family of entrepreneurs” being a success factor. Two distinct groups of critical success factors (CSF) were found: organizational and entrepreneurial. This is in compliance with De Mel et al. (2009) who asks if the innovative power of a company is determined by the innovative power of the organization or the innovative power of the owners.

On an organizational level, the success is influenced by a thorough business plan (Brem, 2008; Rauch, 2000), a clear strategy/mark analysis/competitor analyses and aggressive competitor strategy (Brem, 2008; Rauch, 2000), the usage of a innovation as a business idea (Brem, 2008; Rauch, 2000),

being a member of a formal network (Nandram & Boemans, 2001), having an advisory board (Nan dram &Boemans, 2001) and active marketing (Brem, 2008).

However, on the entrepreneurial level these factors are: the need for achievement (Brem, 2008; Nandram&Boemans, 2001; Rauch, 2000), having locus of control (Brem, 2008; Nandram & Boemans, 2001; Rauch, 2000), the willingness to take risks (Brem, 2008; Rauch, 2000), number of years experience (Rauch, 2000; Brem, 2008), experience as entrepreneur (Rauch, 2000; Brem, 2008), industry specific experience (Rauch, 2000), management experience (Rauch, 2000) and a relevant social network (Nandram & Boemans, 2001; Brem, 2008)….. (Groenewegen et al, 2012, p. 159)

Regarding success of a start-up, past studies suggest a 3-5 year period: "From the outcomes of this study an image of the start-up with the most turnover growth in the first 3 years can be drafted. The results of the case studies by Sandberg (2008), that customer pro-activity is important for the radical innovation within existing companies, can now also be applied for radical start-ups. The results of the case studies by Abetti (2000), that the uniqueness of the advantaged of an innovation is important for the success of the radical innovation within existing companies, can now also be applied for radical start-ups." (Groenewegen et al, 2012, p. 166)

Additional studies (Amit et al, 2012) highlight the role of Business Model Innovation. The authors highlight the fact that innovation in terms of products or processes may require significant investments in research and development; however business model innovation may prove to be a more promising way for a new company. Magretta (2002) also highlights the role of business model innovation through selected companies while additional studies (Mitchell et al, 2004) highlight the role of management commitment to business model innovation, concluding that strategic innovation as defined within business model innovation can result positive impact on both revenues and profits.

The present research examines the correlation between variables which, according to the literature review, have an significant impact on the success of a start-up, such as previous experience of start-up founders (as employees and/or on their previous ventures), the founder's perception of success, perceived competitive advantages of the start-up companies, the reasons (motives) that led founders to form their start-ups and differences between disruptive versus sustaining approaches, strategic alliances, their current achievements and main challenges they face in their current stage of development.

The Digital Greece event had a significant impact in Greek policy planners – start-up founders were invited to a meeting with the Minister of Digital Policy, Telecommunications and Media, and a special support program for start-ups was announced from the Greek Government. Taking into account that Greece has experienced the results of an austerity program for the last ten years, resulting a 25% drop of GDP and unemployment rates of over 25%, a new policy for supporting Greek Start-ups may lead to positive results in the future.

4. RESULTS

4.1. Part 1 – Descriptive Statistics

There were 94 responders in total, which were the founders of the ICT Start-Ups participating in Digital Greece 2018 hosted during the 2018 International Trade Fair of Thessaloniki. From the respondents, 73% were men and 27% women. A total of 36% were between 18 to 28 years of age; 31% from 29 to 35; 28% from 36-45, and 5% were over 45 years old.

Regarding Education, 5% of the respondents graduated High School, 47% hold a bachelor Degree, 36% of the responders hold a Master's Degree and 12% hold a Ph.D. Degree. Regarding the Number of Founders per Start-up, 35% of the responders a single founder, 32% responded that their founders' team had two members, 24% responded three members and 9% responded that the founders' team included four members.

Regarding previous experience as employees, 17% responded that their working experience was up to one year, 14% responded working experience up to two years, 27% responded working experience up to 5 years, while 42% of the responders had 6 years or more working experience.

Regarding previous experience as entrepreneurs, 66% of the responders had not launched a previous venture. 27% of the responders had previous experience of launching one venture. However, there is also a noticeable percentage of serial entrepreneurs among the responders: 2% of the responders had launched three business ventures, while 5% of the responders had launched three or more previous ventures. Furthermore, for those serial entrepreneurs, their success rates were rather satisfactory; 18% of the responders had one of their previously launched ventures still surviving, 3% of them had two previous ventures surviving, while another 3% had three or more of previous business ventures surviving.

Regarding the reasons for founding their current start-up venture, 37% responded that the reason was an opportunity they identified, 24% responded that the reason was a technology breakthrough, 20% responded that the reason was a new business model, and 19% responded that the reason was process innovation. In addition, 78% of the responders found their start-up for one single reason of the ones mentioned above, 16% of the responders for a combination of two reasons, while 3% for a combination of three reasons and another 3% founded their start-up believe that the foundation of their start-up was as a result of the combination of all four reasons mentioned above. Furthermore, for those who actually had established a previous business venture before, 35% responded that the reason was opportunity identified, 26% that the reason was a technology breakthrough, 30% responded that the reason was a new business model and 9% that the reason was process innovation.

Regarding the main challenges for their start-ups, 24% of the responders consider as primary challenge the need to improve their product, 45% the need to get more customers, 24% the need to secure funding, while 5% of the responders face or different challenges and 2% faces no challenges. Furthermore, while 2% of the responders responded that they face no challenge, 65% of the responders face one challenge, 21% of the responders faces two challenges, 9% of the responders faces three challenges and 1% face all four challenges as mentioned above.

Regarding the year of establishment of their start-up, in terms of having a company officially formatted, 20% of the responders have not yet established their company. 7% of the responders had their companies established during the period 2006-2012, 16% of the responders had their companies established in 2013 or 2014, 9% of the responders had their company established in 2015, 13% of the responders in 2016, 24% of the responders in 2017 and 13% of the responders established their company in 2018. In total, 50% of the companies have been established for less than 3 years (Sept. 2018 was the period of data collection).

Regarding their perception of success, 16% of the responders cannot consider it a success as yet, 25% of the responders feel that they will know after 1 year, 46% of the responders considered that they are on the right path, while 13% already consider their current start up as a success.

Regarding their achievements so far, 34% of the responders has developed a working prototype, 38% of the responders has successfully completed Proof of Concept (PoC) phase, 17% of the responders have achieved sales of at least 100k Euros, 11% of the responders have secured funding of at least 100k Euros. 58% of the responders had one achievement, 19% had two achievements, 18% had 3 achievements, 4% had all four achievements mentioned above, while 1% of the responders had no achievements.

Regarding their Competitive Advantage, 40% of the responders consider Technology as a competitive advantage, 27% of the responders consider Business Model as a competitive advantage, 17% considers Intellectual Property as a competitive advantage and 16% considers Management to be a competitive advantage. 66% of the responders consider to have one competitive advantage, 21% of the responders consider to have two competitive advantages, 10% of the responders consider to have three competitive advantages and 3% of the responders consider their start-ups to have all four of the competitive advantages mentioned above.

Regarding the degree of innovation, 21% of the responders consider that they offer an improved product, another 21% of the responders consider to offer a totally new product, 36% of the responders consider to offer a new product approach and 22% consider that they are creating a new market. As an additional finding, 26% of the responders classify their innovation as "sustaining" while 74% of the responders consider their innovation to be disruptive. Furthermore, 82% of the responders consider their start-up to offer just one innovational dimension of the ones mentioned above, while 11% of the responders consider their start-up to offer two innovational dimensions, 4% of the responders consider their start-up to include three innovational dimensions and 3% of the responders consider that their start-up offers all four innovational dimensions mentioned above.

Finally, regarding funding requirements, 30% of the responders do not ask for funding, 23% of the responders require funding of 100k Euros, 8% of the responders require funding of up to 250k Euros, and 39% of the responders require funding more than 250k Euros.

4.2. Part 2 – Statistical Analysis

In this study, use of Statistical Analysis has been used to identify relationships between variables. The data were encoded and entered into an advanced statistical analysis software (SPSS) was used in order analyze the correlation between variables, with the use of Pearson Correlation Coefficient. Findings indicate Statistical Significance for the Correlations presented at Table 1 below:

Table 1: Statistical Significant Correlations

No	Variable 1	Variable 2	Relationship	Correlation	Value Pearson
1.	Success	B2B	Reverse Analogous	Weak	-0,206*
2.	Success	Sales 100K	Analogous	Weak	0,218*
3.	Education	Disruption	Analogous	Weak	0,293**
4.	Education	Get Funding as Challenge	Analogous	Weak	0,282**
5.	Education	Improve Product as Challenge	Analogous	Weak	0,204*
6.	Number of Founders	IP as Competitive Advantage	Reverse Analogous	Weak	-0,241*
7.	Number of Founders	New Market Creation	Reverse Analogous	Weak	-0,238*
8.	Experience	Get Funding as Challenge	Analogous	Weak	0,296**
9.	B2B	Technology as Competitive Advantage	Analogous	Weak	0,222*
10.	Opportunity based	Find new customers challenge	Analogous	Weak	0,274**

*$p < .05$, Correlation is significant at the 0.05 level (2-tailed).

** $p < .01$, ** Correlation is significant at the 0.01 level (2-tailed).

Furthermore, several other variables were examined regarding possible correlation between them; however, there was no evidence that the correlation is significant. More specifically, there was no correlation significance between perception of Success and Gender, Education, Number of Founders, Previous Start-Up Ventures, Opportunity-based Start-Up, Technology-based Start-Up, Business Model based Start-Up, Proof of Concept, Prototype Development and Funding 100k Achievements. This can be explained since Greek IT start-ups appeared to be on an early stage, as also suggested by the high percentage of single founders; to this respects, the academic framework described by Lussier model (Marom et al, 2014), provides a set of variables for consideration for start-up success. However, the macroeconomic environment examined in the Lussier model (Israel) was a very different one from Greek – "The Israeli economy showed great resilience during the latest global economic crisis; and was ranked 1st in 2010-2011 by the ‗Resilience of the Economy' Index, as part of the World Economic Forum Global Competitiveness Index (WEF, 2013)" (Marom et al, p. 65)

There were no correlations between Age and Perception of Success, not with any achievements (Sales 100k, Funding 100, Proof of Concept or Prototype Development). Education is not correlated with variables related to the reason for founding a start-up company: Opportunity, Technology or a new Business Model did not correlate with Education as reasons for setting up a start-up. Furthermore, Education as well as Age variables were not correlated with variables related to Competitive Advantage (Management, Intellectual Property, Business Model or Process Innovation). Furthermore, despite the fact that Education correlated with the need to secure funding, Education did not correlate with the need to Get More Customers. Developing a Disruptive Solution was not correlated to previous entrepreneurial ventures (establishment of previous start-up companies or previous companies still surviving). In addition, Number of Founders did not correlate with reasons for founding a Start-up (Opportunity, Technology, Business Model or Process Innovation), or with achievements variables (Sales 100k, Funding 100k, Prototype Development or Proof of Concept).

There were also no correlation between Experience (as an Employee) and any variables related to achievements of the start-up (Sales 100k, Funding 100k, Proof of Concept and Prototype Development), nor with reasons for founding the start up (Opportunity, Technology, Business Model or Process Innovation).

5. MANAGERIAL IMPLICATIONS

The research findings highlight several aspects of the challenges and business environment of the Greek ICT Start-up companies.

One first remark is the fact that 20% of the founders responded that as yet, they have not formed a company. Academic studies provide some interpretation of this phenomenon: "The pre-start stage can be defined as beginning when there is an intention to start a business and initial steps are taken to prepare for it and ending when a business starts. A time for preparation is needed and this can be very long. The preparation may include identifying a suitable opportunity (stemming from the idea), acquiring the necessary knowledge and skills and locating the contacts who will help." (Bridge et al, 2013, p.128). Furthermore, academic studies already provide "the lean definition of a start-up: a temporary organization designed to search for a repeatable and scalable business model." (Blank, 2013, p. 66)
Another characteristic is the definition of success; founders provided their own criteria for success; academic research suggests that a number of different criteria can be used for entrepreneurial and start-up success, such as financial performance, job positions, company growth and market size. (Fisher et al, 2014, Wash et al, 2016).

There may a combination of reasons, including first of all that their solutions are still on an early phase, and that both accelerator programs welcome participations from teams have not formed officially a company. Secondary that the time required and costs associated with the process of establishing and running a company in Greece are in fact discouraging young entrepreneurs. However the fact that no company is formed results further delays – in fact a business transaction

cannot be materialized, therefore entrepreneurs who have not established a company may result failure to have accurate information regarding willingness of the customers to actually buy and use their solution. However a start-up may be exactly this – an organization or pre-organization, testing hypotheses, mainly those of customer value and growth (Ries, 2011) and therefore, the scope of such start-ups participating in the Digital Greece event facilitates them to actually meet potential customers and test their basic hypotheses, and a step to the right direction.

Research findings also highlighted that 35% of founders are alone – there is no team present. This can be attributed to many reasons, such as the venture may come from an experienced, serial entrepreneur who feels safe to launch a project alone, or that the venture is still at a very early stage, potentially with no company formation so far, therefore it may be possible as the venture evolves more members to join and form a company. However academic research (Aulet, 2013, Roberts et al, 2015) highlights the role of the team in a start-up venture success; from this respect a large percentage of the Greek IT Start-Ups needs to build far stronger teams.

Regarding the findings of statistical analysis, it has to be clear that the statistical analysis reveals correlation, but not causality, regarding the interpretation of the findings. Considering this, there may be many reasons to interpret results. It appears to be a negative relationship between Success perceived and star-ups addressing to B2B. There may be several reasons for this, especially the low investments in IT during the last few years from the Greek Corporations. Academic studies (Aulet, 2013), highlights the complexity decision making process for business-to-business solutions. The majority of Greek companies appear to be followers in digital transformation, and the recent economic decline did not help mass investments. Furthermore, established companies prefer to rely on established suppliers, and specialized B2B solutions may require connectivity with 3rd party solutions to offer actual value. Furthermore, there is a correlation between B2B start-ups and the use of technology as a competitive advantage, which may explain the investment required, in terms of time and money, for developing B2B solutions, and consistent with the negative correlation between perception of success and B2B start-ups. Furthermore academic research indicates links between B2B orientation and external funding and exports ability (Rostek, 2018); the majority of Greek Start-Ups at that time lacked access to funding and ability to invest in exports (Spyropoulos, 2019).

Education appears to be an important factor - there are several (weak) correlations between education and other variables, and more specifically development of disruptive start-ups, which is consistent with the correlations between education and a) the need for product improvement and b) funding; academic studies (Christensen & Overdroft, 2000, p.73) suggest that disruptive technologies may perform "actually worse initially, as judged by the performance metrics that mainstream customers value". To this respect, the needs to further improve their product and secure funding are required, to gain a share of the mainstream market. Further study (Makarona et al, 2019, p.19) highlights the role of academic results (and Intellectual Property) "entrepreneurial endeavours emanating from research results is a new, effective means of returning the taxpayers' money into tangible results", which can be a possible interpretation for the correlation between possession of intellectual property and smaller number founders.

Academic research (Song et al, 2008, Marom et al, 2014) also highlights the role of, education, working experience in terms of managerial and marketing skills, age in Lussier model, as success factors for start-ups. In addition, (Santisteban et al, 2017) concludes that the education does not positively affect performance, unless complemented with experience; however skills related to working experience are key success factors for IT start-ups, while Masouras (2019) also highlights the role of experience, including family environment. There is also a weak positive relationship between sales of over 100k Euros and perception of success; this may be an indication start-up founders do aim high, and are not easily satisfied. To this respect, creating stronger teams with a focus on working experience and relevant skills is advised to existing founding members.

A reverse relationship appears to be between number of founders and use of Intellectual Property as competitive advantage. It may be attributed to the fact that holders of Intellectual Property Rights. Investing in Intellectual Property Rights and lower number of funders may indicate an envisioned strategy for alliance formation with other companies, or outsourcing instead of developing in-house marketing, sales, and other competencies, or may indicate a clear focus on R&D.

Furthermore, a reverse relationship appears between the number of founders and creation of new markets. One reason may be that new market creation may be linked to either a high-innovated solution or a new business model – in case of the innovative solution; there may be links with investment on Intellectual Property rights, as examined above. On the other hand, in case of a new business model established, the basic concept can be materialized with the development of a platform, which can also be outsourced; hence the need of significant investments in R&D may be limited.

For start-uppers with significant experience as employees, it appears to be an analogous relationship between their need to secure finance. This may be interpreted by their need to penetrate the market fast, and further improve their MVP to their full envisioned product. Furthermore, for start-ups that were based on a business opportunity, a main challenge appears to be getting new customers, indicating a scalability issue, especially for start-ups focusing in the local market. The reason for this may be the negative business environment.

Surprisingly, there was also no evidence of correlation significance between some variables where correlation was expected, according to theory: there was no evidence of correlation between perception of success and variables such as Education, Age and Previous Start-Up Ventures. Also no correlation was found between Education and the reasons for creation of start-up (opportunity, technology, or business model). There may be various interpretations for these findings; the sample is limited to 94 founders of ICT start-ups, and these start-ups are currently at different stages of maturity. In addition start-ups are –by definition- formed to test ideas into the market; as such less verified relationships between variables can lead to the assumption that ideas are born from different directions and that pathways to idea testing, early venture failure, delays in maturity or final success are not single-dimensional.

6. LIMITATIONS OF THE RESEARCH

The study examined the ICT start-ups founders participating in Digital Greece event, in September 2018 in Thessaloniki, Greece. As such, all start-up founders have participated to at least one accelerator program – and to this respect they have the elements of business acumen to run their start-ups. However, it has to be noted that there were significant differences at the maturity level of the participating start-ups; 20% of the responders did not had established a company, while 50 of the start-ups were companies less than 3 years old. Therefore, more focused research in the future is recommended to examine start-ups at similar stages of development, which may highlight new types of relationships.

Furthermore, the sample size consists of 94 founders of IT start-ups. Additional research is recommended to take place with an increased sample size, keeping the same key criteria (ICT Start-Ups in Greece, having completed one acceleration program).

Finally, the previous years in Greece were characterized by economic stagnation, after a decade of major economic decline; high unemployment rates, capital controls, major cuts in IT investments; brain drain effect, increased taxation, and increased bureaucracy – it is reasonable to assume that such an environment may have impacted start-uppers as well; therefore future research is recommended in more entrepreneurial-friendly business environments.

7. CONCLUSIONS

The research findings provide the basis for better understanding of the dynamics of Greek ICT start-ups in 2018. The findings are useful to new and future entrepreneurs as they strive to increase the success rates of current and future projects. Furthermore, the present study highlights the ICT Start-up wider innovation ecosystem, such as business angels, venture capital firms, the state etc., providing a better understanding to further improve their success on investment, risk management, design and implementation of policies for innovation promotion. Finally, key areas for further research are identified.

There is positive correlation between B2B start-ups and technology, and also negative correlation between B2B and founder's feeling of success. There are also correlations between Education and disruptive solutions, and also between education and identification of the challenges to improve their solutions and get more customers. There is negative correlation between number of founders and Intellectual property, as well as between number of founders and creation of new markets. Finally there is positive correlation between experience and the need to secure funding.

The study of start-ups is actually a study of the exception; many new ideas are born and tested, only a few will survive and even fewer will become a major success. From this point of view, a more chaotic ecosystem, with fewer relationships between key variables established, reveals a dynamic environment, where new ideas are born, generated from many possible directions and tested into the market; providing a hope for the future of innovation in Greece.

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"Did you hear about…?": Or business and brands in the age of Fake News, and Urban Myths.

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Key words: Urban Myths, Fake News, Logos

ABSTRACT

The purpose of this paper is to introduce the concepts of Urban Myths and Fake News, and to illustrate their relationship and relevance to business in general and brand reputation specifically. Using netnographic desk research, various aspects of Urban Myths and Fake News were analysed, including their influence on business.

INTRODUCTION

On the 4th of February 2017, Donald Trump tweeted: "After being forced to apologize for its bad and inaccurate coverage of me after winning the election, the FAKE NEWS @nytimes is still lost!!" (Leonhardt & Thompson, 2017)

This social media comment is interesting in two points, firstly, that Mr Trump used the term 'fake news' in relation to disparaging a world-wide media brand, and secondly, the tweet itself was deliberately inaccurate as the NY Times had not apologised (Sulzberger & Baquet, 2016). This term 'fake news' has returned into common usage through its use and abuse by President Donald Trump, which he uses the sentence in relation to attacking fact or commentary, which does not fit with his worldview, or policy agenda. The New York Times has in fact given an entire section devoted to his lies (Leonhardt & Thompson, 2017).

While fake news has a pedigree beyond Trump, originating from among others, the concept of *Lügenpresse* or "lying press"a term popularised previously by the National Socialist hierarchy in Germany (Beiler & Kiesler, 2018; Nesbit, 2016), while this term can be considered as an ancestor of Fake News. In general terms, this term 'Fake News', is defined as, "news articles that are intentionally and verifiably false, and could mislead readers." (Allcott & Gentzkow, 2017, p.213), but its more commonly known cousin 'urban myths' which "are pure fantasies from someone's imagination….but are always told as true" (Brunvand, 1990, p.14). Thus the terms 'fake news' and 'urban myths' are what can be considered as stories that manipulate, alter, falsify or misrepresent the truth.

The author's interest in this area is due to a lifelong interest in Forteana. Forteana is a catchall term for a wide variety of interests, products, subcultures, investigations and intellectual pursuits that

relate to the writings and works of Charles Hoy Fort (1874-1932). These include The Book of the Damned (Fort, 1919/2008); New Lands (Fort, 1923/2008); Lo! (Fort, 1931/2008) and Wild Talents (Fort, 1932/2008). Fort was interested in gathering, collating, and analysing anomalies and oddities, his name attached to a wide variety of subject areas, with the spreading of fake news and urban myths/legends being such areas. Specifically, however, these subjects were first looked at in detail by American folklorist Richard M. Dorson in his book American Folklore (1959/1977). While the term 'urban legend' was popularised by the work of US folklorist Jan Harold Brunvand (1981) who wrote several collections of urban legend, while present academic interest is found in the International Society for Contemporary Legend Research (contemporarylegend, 2018). What is noteworthy is that the organisations newsletter is named after a type of Urban myth, FOAFtale News – FOAF standing for "friend of a friend" (folklore, 2018).

The relevance of these two areas in relation to business and marketing are the accounts relating to businesses as represented within fake news commentary, or in an urban myth. In fact, this area is so prevalent within the sphere of Urban Myths that it has an entire subsection relating to it (Brunvand, 1981, pp.154-173; Brunvand, 1990, pp.219-273). This includes all aspects of business activities, including dangerous products, e.g. LSD laced tattoos sold to children (New York Times, 1998), the effect of products such as Mountain Dew reduces sperm count (Reddit Answers, 2013), or business accomplishments such as Coca-Cola 'invented' the Modern iteration of Santa Claus (Mikkelson, 2016; Conversation Staff, 2012). To illustrate the pervasiveness of the issues related to in this paper, an 'business and urban legends' google search brings up 11,300,000 results, while business and urban myths has 3,210, while 29,600,000 results for the search term 'fake news and business'(Google, 2018a, 2018b, 2018c)

While urban myths/legends alongside fake news have been in existence since the beginning of inter personal communication, the development of the internet and social media has propelled this exponentially. It has developed from a being a specialised interest area for a small number of who in the past were considered 'cranks' to a global phenomenon, which has influence far beyond what could have been imagined in a pre-digital world. The relevance and importance of this area can be seen in the fact that 62% of US citizens obtains news from social media (Gottfried & Shearer, 2016), and that an Ipsos poll identified that 75% of American adults who had viewed a fake news headline regarded the story as true (Silverman & Singer-Vine, 2016).

These concepts of 'false information' in terms of urban myths, legends, and fake news have come into common knowledge through the controversy surrounding the US 2016 elections (Masters, 2018). In terms of the accusations of Russian interference in the elections, including use of targeted fake news, and Donald Trump's controversial use of the term 'fake news' to denigrate news items unfavourable to him, while he also has aspects of urban mythology within his 'tweets.' In fact, the linkage of such themes of fake news to Social media that It has by early 2018 become intertwined in a debate about the ethics relating to the usage of social media use in general, and the activities and possible malign influence of Facebook specifically (Klein, 2018; Levin, 2018).

Methodology, as the dissemination of these types of narrative are predominantly found online, the methodology of choice in looking at this subject is netnography as such communication gives a wealth of online data that can be used. This paper discusses the first part of an ongoing study into this area and limits itself to the identification and analysis of such narratives on webpages in the public sphere;

secondary data analysis of online and printed work on the subject area will help form an initial typology. The second part will develop the ideas and areas identified in the first including the typology through primary data collection about perceptions of false news and urban myths relating to business. This will lead onto the third part where further primary research will be undertaken to look at the motivation of individuals in spreading such narratives, the effect on businesses and the repercussions on individuals, business and society in relation to such narratives.

BACKGROUND OF FAKE NEWS AND URBAN MYTHS/LEGENDS

What has altered the ability to spread fake news and urban myths/legends has been the creation of the Internet. The move from analogue to digital information, the increased availability of smart phones, tablets and other forms of personal computing alongside the decrease in the knowledge base required to facilitate use of online services e.g. creating web pages, blogs, online video channels has developed to a point where these are 'normal' activities. The revolution in digital data collecting, storage and management has changed how and what we consume (Datamonitor, 2006) how we interact (Kozinets, 2001). The use of such new technologies were first exploited mainly by individuals and groups considered to be on the fringes of 'normal' culture (Kozinets, 2001).

There emerged a range of communities within cyberspace soon after the creation of the Internet. Cyberspace allowed people whose interests were similar but who were geographically disparate, allowing new relationships between consumers, marketers, brands, and companies in general. These changes paralleled the creation of Netnography as a research tool to investigate the individuals' usage of the internet to express themselves and to communicate within like-minded communities (Kozinets, 1998, p.366). The situation concisely described by Khaldarova and Pantti (2016, p.891) "While the internet provides new opportunities for top-down strategic narrative work, it also nurtures the routine contestation of strategic narratives and the management of information by a new set of elite and citizen actors". This 'contestation' in relation to news is that it has the problem of being "delivered to and received by us in video clips and sound bites, often forwarded without filter or review through social networks from one screen to another in a matter of minute" (Frederiksen, p.104). In addition, the development of fake news in such a manner used by individuals, groups, and states which can be thought of as the privatization of propaganda (Bolin, Jordan, and Ståhlberg, 2016). The analysis of urban myths/legends online exists in various webpages such as alt.folklore.urban, Snopes.com and the Fortean Times online Forum. These facts checking pages alongside the other general conspiracy and esoterica related pages were utilised in creating the initial typology found in a later section.

Fake news, or urban myths/legends when circulated, as phony press releases and news reports, can be misleading and harmful, particularly when separated from their original contexts and sources. Technology has pushed this even further with automated Twitter accounts – or 'bots' – can disseminate messages that can affect public opinion. Some initial research in this area suggests that these 'fake' social media activities had an effect during both the UK's Bexit referendum on EU membership and the US presidential election (Gorodnichenko et al., 2018). Further research on bots investigated whether information in tweets/bot-tweets have any effect upon investors activities and stock market performances. It identified that there were "significant associations between tweets/bot-tweets and changes in stock returns, volatility and trading volume"(Royal Economic Society, 2018) by looking at 55 large FTSE100 companies between August 2015 to July 2017, cross

referencing their share activities with 49.17 million tweets, that had these companies' names found within them (Ibid). While research in this area is in its infancy, what can be stated is that share prices can altered quite dramatically through the tweeting of specific individuals who have influence far beyond normal individuals such as Donald Trump. In China a reporter was arrested for 10 fake news stories between September 2012 and August 2013 stating that there had been losses of state assets, irregular practices, including fabricated financial reporting by the company Zoomlion (Rapoza, 2017). This led to its stock price falling by 26.9% on the Hong Kong stock exchange (Ibid).

Logos and Brands

A large amount of expression in fake news and/or urban myths/legends relates to the symbolic representation of a brand. As branding is the "unique combination which the name or logo of the product or service should evoke in the mind of the audience" (Chartered Institute of Marketing, 2014), it has a very specific and special relationship with both Fake News and Urban Myths. This is due to the ability to interpret subjectively the logo of a company through the filter of the personal and/or group ideology. However, when this culture or subculture is at odds with the 'norm' of the overall society, then other unconventional interpretations occur.

As the logo is part of the brand and that the brand is "a name that symbolises a long-term engagement, crusade or commitment to a unique set of values, embedded into products, services and behaviours" (Kapferer, 2012, p12), it leads onto the question of what is the result of such subjective interpretations or fake news reportage to businesses. The answer to this is the real or imagined damage to the reputation of a business caused by such activities. For example, the urban myth surrounding the historical logo of Proctor and Gamble, in that it represented the company's ties to the Church of Satan (New York Times, 2007).

Furthermore, these rumours, fake news stories and urban myths can and do lead to damage of brand reputation and/or in some cases calls for boycotts (Q13FOX Online, 2008; Walsh, 2008).

General Products

This type of urban myths/legend is one of the most popular as they are generic, and whilst some identification of the product type is required, the general geographic area, time and or other specifics are usually missing. As David Clarke describe such Urban myths/legends them as: "Their plots often revolve around anxieties surrounding modern behaviour or inventions such as motor cars, terrorists, hitch-hiking, mobile phones and microwave ovens. Their content, whilst sometimes amusing, is often bizarre, frightening or macabre." (Clarke, 2018)

This classification of the content can be seen in the following examples. LSD transfer tattoos sold to/given to children, this urban myths/legend states that drug dealers are creating temporary lick-and-stick tattoo soaked in LSD, this is generic and a recurring theme dating to at least the 1970's. Whilst some attribute the tattoos with designs of popular children's cartoon characters which are utilised to attract children in order to get them 'addicted to LSD' (Mikkelson, 2012). Yet no real example of this has ever been identified but as identified by Dr. Frank Bonfiglio, at the Middle Tennessee Poison Center it is a recurring falsehood. "It's like a bad nightmare. This letter keeps resurfacing over a period of time" and that "kids would have to lick the tattoo to get it absorbed into the body" (Ibid).

Friend of Friend Works There or Had A Service Experience.

Individuals often maintain the veracity of an urban legend, due to the 'fact' that they claim that the experience happened to an individual close to them, while not a intimate personal friend, but a "friend of a friend" or FOAF. This acronym was created by Rodney Dale in his 1978 book The Tumour in the Whale: A Collection of Modern Myth. Its relevance to Urban legend is seen in the statement on the International Society of Contemporary Legend Research's webpage which states "contemporary legends always seemed to be about someone just two or three steps from the teller - a boyfriend's cousin, a co-worker's aunt, or a neighbor of the teller's mechanic" (Folklore, 2018).

It is noted that a FOAF is utilised by the storyteller as the situation is that they are close enough to the individual to imply credibility, while not close enough so that they can be identified accurately or questioned. A more academic view of this is given by Tangherlini, (1990, p.374) "At any time, a fabulate can take the form of a memorate and, more importantly, vice-versa, simply by changing narrative voice. A primary reason for this change is the tendency to perform legend as a true narrative." Thus, in theory any story which is preceded by "A friend of a friend of a friend told me" has essentially no credibility (Degh and Vazsonyi 1974, pp.230-231).

Like other Urban myths these FOAF stories are contemporary legends which incorporate beliefs, fears and prejudices about everyday situations in the contemporary world. What can be identified however is that these invariably in relation to business and brands involve the personal experience as a customer, client, worker in, owner or knowledge of a business projected vicariously via the FOAF. One specific example of this is that of a woman customer at the China Rose near Doncaster, South Yorkshire, who allegedly choked on an identification microchip from a former racing greyhound. The rumour spread by Facebook created a 20 per cent drop in bookings (Alleyne, 2011). This rumour is part of a larger general trope of FOAF about Chinese restaurants serving forbidden meat and is found in the US as well as the UK (La Capria, 2016). It is seen by La Capria (2016) as "this perennial myth…serves as a socially acceptable manner by which to voice doubt about the trustworthiness of unfamiliar or exotic cultures."

TYPOLOGY OF FAKE NEWS AND URBAN MYTHS/LEGENDS

The urban myths can be classified and analysed in terms of:

1) What is the subject matter? See below and table 1.

2) The origin of the story / own / friend / friend of a friend / real organisation/ fake organisation

3) Was the story negative or positive?

4) Was the story real or false?

5) Was it a 'news item' or a story?

The subject matter in relation to business and brands the themes within Urban myths/legends and fake news can be divided into the following sections: was identified:

Product story/generic, this is where there is a product or product type as the main or pivotal issue in the narrative but does not have a brand associated.

Product with a specific brand as the main or pivotal issue in the narrative.

Brand related story, this is where the brand itself is the main or pivotal issue in the narrative, it is the brands activities and/or viewpoints are the target, however, this can overlap other areas such as logo interpretation.

Owner/worker/customer related Service experience, this is where an unbelievable action, or secret knowledge is obtained via a service experience, on either side of it as a customer or provider.

Logo interpretation, this is when individuals impose their own ideology on the interpretation of the symbology within brand logos. This tends to link to the 'satanic' or some esoteric proof of a larger conspiracy.

Type of Urban myth/ false news	Product story/generic	Product story/specific brand	Brand related story	Owner/worker /customer related Service experience	Logo interpretation
Examples: Taken from alt.folklore.urban Snopes.com Fortean Times Forum Top 10 Satanic Symbols Hidden in Logos, Vigilant Citizen,	LSD transfer tattoos sold to/given to children Kidney for sale/stolen Banana skin can be smoked to get high Woman removes label from "tuna" can, finds cat food label underneath.	Coca-Cola could be used as oral contraceptive Coca cola mixed with dispersible aspirin could get you high Mick Jagger used a Mars bar as a dildo on Marianne Faithful. Red M&M's are a carcinogen A popular Mexican beer (Corona) was made with urine.	Procter and Gamble satanic Starbucks hates Christmas (various versions) Snapple supports Operations Rescue/KKK Model's penis showed in a Sears catalog ad for shorts	Stranger at restaurant eats your cookies, you grab, later find you took his. Many CIA (and other government) snack bars are staffed by blind people. There is a "secret" "Club 33" serving hard liquor, in New Orleans Square Disneyland.	Procter and Gamble shows satanic imagery Starbucks logo is pagan Star defense logo is Islamic/communist inspired The ship on the label of Snapple is a slave ship Coca cola logo backwards is Islamophobic
	Baby Food contaminated with razor blades Urine on Restaurant Mints	Number of stars on Playboy cover is the number of times Hugh Heffner had sex with the centerfold.	In-N-Out Cups Contain 'Hail Satan' Messages Kentucky Fried Chicken" changed its name to KFC to eliminate the word "fried" from its title	A customer at a Chinese choked on an identification microchip from a dog KFC uses Mutant Chickens	Google Chrome logo has '666' hidden in it

Table 1.

FAKE NEWS AND URBAN MYTHS AND LEGENDS CASE STUDIES:

VODAPHONE AND PROCTER AND GAMBLE.

In terms of a link between marketing communication, branding, and corporate reputation and urban myth/legends and fake news there are interesting and very public examples which exist on the cusp of semiotics, consumers' interpretative meanings, their views of brands, and logos and are, as such, a relevant issue for the purveyors of such 'hidden knowledge'. Such 'hidden knowledge' occurs by the images and symbols having associated meanings that have the ability to specify and communicate the attributes, benefits and characteristics of the commodity; importantly it differentiates one from another brand (Sujan and Bettman, 1989). Consumers' interactions with these images symbols and meanings can occur within a sliding scale of reactive activities, from those who agree with the 'given' meanings of within the media and those who reject them as discussed by Arnould and Thompson:

> "….meaning-creating activities range from those that tacitly embrace the dominant representations of consumer identity and lifestyle ideals portrayed in advertising and mass media to those that consciously deviate from these ideological instructions. This latter family of interpretive strategies gives rise to variegated forms of identity play and sometimes shades into strident criticisms of corporate capitalism and marketing as a social institution" (Arnould and Thompson, 2005, p.874)

The negative information extrapolated from or interpreted as such has increasing influence on how some consumers perceive the companies. In terms of Fake news and urban myths and legends the issue of interpretation and belief in relation to signs and images runs in direct opposition to the 'given' meanings, and logos are interpreted in a negative light. These issues involve brands such as Procter and Gamble, Microsoft, Alfa-Romeo, Vodaphone and Walt Disney among others (Vigilant, 2018).

Thus, certain consumers interpret these logos as symbols of dark forces, unlike modern anti-capitalist views of multinational corporations as can be seen in Naomi Klein's work No Logo (Klein, 2009). Members of this group project far more esoteric, cultish, conspiratorial based on religious interpretations of these logos and can be seen in through the filter of the ideological Culture wars being fought in American society today. For example, this is an example from Vigilant Citizen:

Fig 1 original logo

Fig 2 logo with analysis

> "This logo has been criticized because there are three 6′s hidden in it. Can you see them? As you might know, 666 is the biblical number of the Beast in the Book of Revelation. It is associated with Satan, the Antichrist and Bob Saget (little humor here)….the good people at Vodafone however love it to a point that they use it all over their advertisements."
>
> (Vigilant, 2018)

Apart from the 6's that are perceived in the Vodaphone logos and adverts to be satanic, there is also an accusation that the red 'comma' is actually representational of a blood drop. In addition to it referring to a bloodline and blood in general which in esoteric, occult and Masonic mythology is important. What can be seen is that mutually exclusive stories, legends and mythos are woven together to justify consumers own views of the world.

A prime example of what Holt (2002, p82) identified as:

> "But, at the same time, postmodern consumer culture emphasized that, to be socially valued, cultural content must pass through branded goods. Whereas modern consumer culture authorized the meanings that consumers valued, postmodern consumer culture only insists that meanings—any, take your choice—must be channelled through brands to have value".

Yet the value of the brands to these individuals is not the value that was envisaged by the marketer who created the logo. Consumers' ability to impose interpretations on images through the usage of symbolic meaning from mythology and religious readings create problems for corporations as these individuals are channelling their own religious, conspiratorial and personal views onto a variety of symbols and images. They collect in forums and webpages where they inform one another of a variety of 'truths' which they regurgitate, repost, and present in a salacious manner.

Procter and Gamble

This issue is not a new phenomenon or an invention of the internet age; furthermore, this issue does not limit itself to be the stuff of urban legends values and views restated and repeated interminably by a small number of "true believers". This can be seen in the historical controversy surrounding the Procter and Gamble (P&G) logo, which demonstrates the extent of damage that such links can affect and the extent to which corporations must go to, to protect their reputation.

The P&G logo created in 1851 and represented the moon and the stars or a man in the moon in conjunction with 13 stars, representing the original 13 colonies, which developed into the United States (Procter and Gamble, 2018). The logo developed over the years going through at least 5 different variations. Controversy surrounded the logo which originated in the 1930's where the man in the moon was represented stylistically by an individual with curly hair and a beard. This led to the interpretation of the visual imagery to show that it overtly represented the devil and had hidden numerical meanings i.e. 13 stars and inverted 666.

Fig 3 (Vigilant 2018)

This interpretation was based on the passage in the Bible, specifically Revelation 12:1, which declares: "…And there appeared a great wonder in heaven; a woman clothed with the sun, and the moon under her feet, and upon her head a crown of 12 stars." (Biblehub, 2018)

It was claimed that the logo was created to ridicule the heavenly symbolism in the mentioned passage, while imposing upon it the imagery of the beast, Satan, a false prophet. These claims escalated with other accusations, which were both imposing and potentially damaging to the branded reputation that P&G discontinued that version of the moon-and-stars logo in 1985 (see figs 3 and 4). The effect of the rumours was that by the early 1980s P&G began receiving thousands of phone calls concerning the company's perceived links to Satanism; 15,000 a month at one point (Belkin, 1985). Many were motivated by fliers, which declared that 10 percent of P&G's profits went to the Church of Satan, and that the president of the company had admitted P&G's satanic connection (Mikkelson, 1998).

P&G took legal action when possible; the best known of these were the legal action taken against the company Amway. The rumour re-surfaced in 1995, when an Amway distributor, Randy Haugen circulated it to other Amway distributors via the telephonic messaging system for Amway distributors known as "AmVox" (Mikkelson, 1998). P&G successfully sued individual Amway distributors in 2007 for $19.25 million on the basis of on the Lanham Act, which prohibits unfair competition and false advertising (Fox news, 2007).

However, the winning of the litigation process and stylistic change of logo did not halt the true believers discussing this as can be seen in the comments given in a webpage dealing with the "Top 5 Most Sinister Corporate Logos" (Vigilant, 2018):

> "There are exactly 13 stars in the logo, an important number in esoteric (especially masonic) numerology. In their lawsuit against Amway, P&G claimed that the 13 stars referred to the 13 colonies of the US. I'm sorry, but that is 100% BULL-CRAP. You might convince bribed judges or morons of this idiotic explanation, but any knowledgeable person in occultism realizes that this logo isn't just a collection of random cool looking things, as they might claim. There are clear astrotheological and esoteric symbols in this logo, who make it reminiscent of images found in ancient Black Magic books."
>
> (Vigilant, 2018)

Fig 4 (Procter and Gamble, 2018)

Conclusion the effect of fake news and urban myths /legends

What can be seen in the use of Urban myths/legends and fake news in relation to businesses is that they are representative of the worries, fears and prejudice existing in the world. Also, it includes all aspect of business, product, service, brand reputation and symbolic representation via logo interpretation. In fact, the whole point of Urban myths/legends and fake news is to create an alternative narrative, or reality concerning the point which is being discussed. Invariably it has negative outcomes, whether it is a small Chinese restraint or a multinational such as P & G. Furthermore, its relevance and importance in affecting consumer's perceptions, the marketplace, and stock prices have all been noted. Furthermore, due to the insidious and all-pervading nature of the Internet and social media, they are now not only here to stay but weaponised, both by organisations and individuals and caught into the maelstrom of modern 'culture wars.' What is pertinent is that the while the original Vigilant webpage was identified back in 2009 by the author, it had by 2018 had taken down some of the information they originally had on these brands. However, the information had already been disseminated widely on the internet, copied, repackaged and regurgitated by many others, which shows not only the long-lived nature of such narratives, but also the ready nature in which others will so unhesitantly believe them when it fits with their world view.

In terms of research the next part will develop the ideas and areas identified in this article testing perceptions of the typology through primary data collection, looking at consumers perceptions of the Urban myths/legends and fake news, looking for points of interest and recurring themes. This will lead onto the third part where further research will be undertaken to investigate the motivation of

individuals in spreading such narratives, and the subsequent effect on businesses and the repercussions on individuals, business and society in relation to such narratives.

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