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Entrepreneurial resourcefulness and constraints in the development of eldercare services: Learning from organizations in mature and emerging institutional contexts

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Abstract

Purpose To identify entrepreneurial strategies, actions, and innovative measures to create resourcefulness for addressing constraints in the development of eldercare services. The study also analyzes and suggests potential antecedents and outcomes.

Method A grounded theory approach was used to identify central aspects and conditions for entrepreneurial resourcefulness in the development of eldercare services in India and Sweden. Interviews with senior managers were analyzed and four successful organizations were selected for deeper contextual analyses.

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Findings Three major themes of entrepreneurial capacity to create resourcefulness were identified: (1) to overcome financial constraints and cost diseconomies, (2) to overcome human resource constraints, and (3) to bring about service innovation in existing market/industry constraints. These were creatively met by measures taken to overcome these constraints. The analysis also found limits of entrepreneurial resourcefulness. For instance, despite resourcefulness there are still challenges related to attracting and retaining care workers, value conflicts, and person-centered care.

Originality/value Many studies confirm the importance of resource but few have unpacked the phenomenon and its implications. Based on senior managers and successful organizations in both emerging and mature context of eldercare, and a conceptual model, this study contributes to better understanding of resourcefulness in such contexts.

1. Introduction

In health care and eldercare, the continuous creation of service in organizing and delivering care is the key to create better values for users, organizations, and society (Porter, 2010). Eldercare services are now expanding in many countries and demand a mobilization of resources to create different kinds of value. This study explores resourcefulness from entrepreneurial actions to seek and develop resources in order to establish eldercare services originating from successful entrepreneurial organizations in two different cultural and institutional contexts: India and Sweden. The analysis delineates the constraints in terms of (new) challenges and self-limiting conditions as well as challenges that emerge due to focusing too much on resourcefulness (i.e., the limits of resourcefulness).

Managers play an entrepreneurial role in creating value. This means that they, either on their own or inside organizations, "pursue opportunities or future situations that are both desirable and feasible" (Stevenson and Jarillo, 1990: 23). Importantly, this process involves both the simultaneous pursuit of opportunities and the mobilization of resources that may or may not yet be within the entrepreneur's control (Stevenson and Jarillo, 1990: 23). Supporting the entrepreneurial spirit within an organization is determined by encouraging the employees to propose creative and innovative ideas, offering monetary and non-monetary rewards as well as promoting employees who have proposed innovative ideas, thus being tolerant of risky decisions made by employees and making the required resources available for them in order to assist them while implementing their ideas (Mahrous and Genedy, 2018). Entrepreneurial activities in a sector are eventually the driving force in any economy that shapes the development of different forms of organizations and institutions that constitute the creation and evolution of a business sector or economic activity (Ebner, 2005). The sector for eldercare (or health and social care) is no exception to this rule. Nevertheless, the entrepreneurial activities to create resources may be shaped by a country's institutional of formal components, such as laws and infrastructure, as well as informal components, such as norms and behavioral conventions (De Clercq et al., 2013). Entrepreneurship doesn't happen in isolation but in the presence of various institutions which have a decisive impact on productive entrepreneurship and its impact on economic growth (Bosma et al. 2018). Earlier studies have shown the impact of productive entrepreneurship on economic growth (e.g. Holcombe, 2000; van Stel et al. 2005, Carree and Thurik, 2003), institutional quality on productive entrepreneurship (e.g. Wadhwani, 2020; Bosma, 2018; Bylund & McCaffrey, 2017; Chowdhury et al. 2019), socio-cognitive traits of entrepreneurship (Boudreaux, 2019); and the role of resourcefulness on productive entrepreneurship (e.g. Fisher et al. 2021; Misra and Kumar, 2000; Powell and Baker, 2011; Welter et al. 2018; Michaelis et al. 2020). However, the interplay of resourcefulness, entrepreneurship and institutional contexts is still under-researched especially in a

developing or emerging institutional context vis-à-vis a matured and developed institutional context.

In this paper, we address this gap area of research. The main objective is to identify entrepreneurial strategies, actions, and innovative measures that create resourcefulness and address constraints in the development of eldercare services. The study also analyzes and suggests potential antecedents and outcomes as well as the limits of entrepreneurial resourcefulness. These factors have been depicted in a conceptual framework that we develop in this paper, and they are explained with the help of the studied organization cases.

1.1 Research context: Eldercare in emerging versus mature contexts

An emerging institutional context means that the demography of the sector is predominantly young but has a growing older population (which is quite large in absolute terms), that the sector is mainly driven by private new ventures, and that public health policies, especially concerning eldercare, are still at a nascent stage. India is an example of such a country where we have an emerging institutional context in the eldercare sector. As per a study by the UN, 62.1% of elderly individuals in India do not get long-term and palliative care. Furthermore, managing home care for the elderly is a massive challenge as multiple service providers – nursing agencies, physiotherapists, and medical suppliers – are unorganized and small-scale in nature and, therefore, provide incomplete care (HelpAge India, 2019). While the role of the government in India has been to proactively create policies that promote the development of this sector private enterprise has filled the gap toward providing innovative financial health care technology and solutions based on home care (CII Senior Care Report, 2018).

On the contrary, a mature institutional context signifies a sector that is predominantly developed in terms of essential aspects from policy to practice (Schön and Heap, 2018). Sweden is an example of such a country, where health care and social services related to eldercare are quite well-developed (also in terms of proportion (ibid.)). This sector is mostly state-funded through collected taxes but is currently in a state of transition due to higher demands for efficiency and quality expressed as marketization forces. Thus, it is a mature institutional context in "transition," where the eldercare sector is publicly funded and mostly organized through public actors. One entrepreneurial model for developing eldercare is the so-called intrapreneurial model, meaning that the public sector organization is initiated, developed, and run by the managers and staff as if it were their own company. However, the business is still municipally owned and the staff is employed by the municipality. An intrapreneur has expanded mandates as well as increased responsibility for service, finances, and personnel. The framework (nature, scope, and area of responsibility of the business) is governed by an agreement with the municipality. Thus, intrapreneurship means that the organizations are created by a re-venture from one overall employer to a local manager (intrapreneur) operating within the overall organization, where the overall employer maintains obligations such as strategic and long-term management and legal responsibility for finances and staff but offers freedom to the intrapreneur and its organizational unit to handle resources and daily operations at their discretion (cf. Teltumbde, 2006). Intrapreneurship is here considered a form of entrepreneurship, opening up for interesting analyses and comparisons between eldercare in two different institutional contexts: emerging versus mature contexts. Without an enabling institutional environment that encourages individuals to look upon entrepreneurship as a viable option, it is debatable whether there will be a significant improvement in entrepreneurship (Kumar and Borbora, 2018: 195). An understanding of the institutional contexts is essential for developing sustainable entrepreneurship.

The entrepreneurial development of eldercare in Sweden may differ considerably from India but has the same kind of demands for value creation and delivery as in the latter country, although this demand is met by means of marketization, private ventures, and re-ventures undertaken by public actors (Schön and Heap, 2018). It is notable that in both contexts, increasing demands regarding efficiency are put forth by forces in the growing elderly population with high and partly new demands related to quality as well as a lack of financial and human resources on an overall level.

2. Conceptual framework

2.1 Entrepreneurial resourcefulness and constraints

Resourcefulness typically refers to the characteristic that allows individuals to "get more for less" and to better identify "novel and clever ways to bring, assemble and deploy resources, as a deterministic response to individual and environmental resource constraints (Michaelis et al., 2020).

According to Fisher (2012), an entrepreneur takes action by seeking resources to establish an entity that will develop and deliver a product or service in order to exploit the identified opportunity and, in so doing, create returns from the venture. The concept of resourcefulness identifies and explicates a set of fundamental generic cognitive characteristics called competencies in the managerial context (Misra and Kumar, 2000).

Most new ventures and start-ups begin with limited resources and stringent budgeting but are able to outmaneuver their better-resourced competitors through frugality and resourcefulness, which basically means "doing more for less" (Bradley and Mitchell, 2005; Ganz, 2000). According to Powell and Baker (2011), resourcefulness in the context of entrepreneurship refers to learned behavioral, financial, and social repertoires for dealing with problems, especially those of novelty, in starting a business. This often involves finding a niche in the market and then develop reliable processes to serve the market.

Resourcefulness and entrepreneurship are not isolated but are both crucial for the success of any organization (Zahra et al., 1999). An organization's resilience is strongly shaped by its ability to manage its resourceful behaviors (Powell and Baker, 2011). It could also signify the capacity of key actors (e.g., managers) to recover from difficulties or times of toughness by withstanding, handling, dealing, or even overcoming constraints by damage control, learning, and adaptation (Cynthia et al., 2011).

Finally, Ganz (2000) describes resourcefulness as a strategic capacity. This strategic capacity is evidenced by innovative thinking in dealing with problems through the combination of salient knowledge, heuristic processes, and motivation (Bradley, 2015).

2.2 The role of entrepreneurs in value creation

Value in health care is defined as the ratio of quality to cost. Value can be increased by improving quality, reducing cost, or preferably both (Meier, 2011: 347). If value improves, patients, payers, providers, and suppliers can all benefit while the economic sustainability of the health care system improves (Porter, 2010). Productive entrepreneurship leads to value-creation as it contributes to societal well-being through introduction of new products or new production processes (Lucas and Fuller, 2017).

Customers engage in activities to achieve value, not only financial value but also social, psychological, aesthetic, and moral value (Normann and Ramiréz, 1994: 62–3). Health care stakeholders have a myriad of often conflicting goals, including access to services, profitability, high quality, cost containment, safety, convenience, and patient satisfaction (Porter, 2010). The concepts of efficiency, complementarities, lock-in, and novelty are all important for value creation in business operations (Hitt et al., 2001: 486). Moreover, service firms should persist with value creation initiatives through new and improved service offerings, given that innovation is critical for outperforming rivals (Salunke et al., 2013: 1093)

2.3 Market-driving entrepreneurship and Intrapreneurship

Market imperfections are the source of entrepreneurial opportunities, which, according to Cohen and Winn (2007), could be of four types: (1) firms are not perfectly efficient, (2) externalities exist, (3) pricing mechanisms work imperfectly, and (4) information is not perfectly distributed. Underutilized or unemployed resources, as well as new capabilities or technologies, may offer possibilities to create and deliver new value for prospective customers, even though the precise forms that this new value will take may be undefined (Ardichvili et al., 2003: 108).

To exploit these opportunities arising due to market imperfections, entrepreneurs may adopt a market-driving or market-driven approach. According to Jaworski et al. (2000), market-driven refers to a business orientation based on understanding and reacting to the preferences and behaviors of actors within a given market structure. Market-driving, on the other hand, implies influencing the structure of the market and/or the behavior(s) of market actors in a direction that enhances the competitive position of the business. A recent study by Stathakopoulos et al. (2019) has shown firms with market-driving approach have a top management that depicts specific characteristics such as open-minded policy, strong vision, strategic human resource management, transformational leadership, fostering creativity, insightfulness, and intrapreneurship.

In eldercare services, the market-driving approach will require new ways of organizing work. According to Avby et al. (2019), this can be achieved through three different types of innovations: service innovations (changes in capabilities of services), process innovations (new or altered processes), and organizational innovations (new ways of doing business).

Intrapreneur is the term we use for employees of established organizations who behave like entrepreneurs. In fact, managers do play the role of an entrepreneur and such a role describes the manager as the initiator and designer of much of the controlled change in his or her organization, as the manager looks for opportunities and potential problems that may cause him or her to initiate

actions (Mintzberg, 1971: 105). The reason why many organizations fail or are unable to be successful is not entrepreneurship but a lack of intrapreneurship in managers in such organizations (Teltumbde, 2006). Also, increased privatization or private participation in a service sector tends to spur organizational and management support for corporate entrepreneurship and corporate entrepreneurship activities (such as new venture formation, product/service innovation, and process innovation), which are beneficial for organizational growth and profitability (Antoncic et al., 2003). In line with Teltumbde (2006), our study of managers acting as intrapreneurs shows that they are a kind of entrepreneur and that their activities/strategies contributed to organizational success. It might then be interesting to further study the possibilities for managers to act as intrapreneurs in eldercare generally.

According to a study conducted by Heinonen (2003) on Swedish public sector organizations, security and trust constitute the basic assumptions of the organization and create a favorable basis for the emergence of intrapreneurship in public sector organizations. Entrepreneurship applied to public health organizations can be termed public health entrepreneurship (PHE), and it includes entrepreneurial practices such as operational efficiency through improvements in cost savings, generating revenue through fees, reimbursement or grants, and overcoming the barriers to PHE, such as political, cultural, and bureaucratic barriers (Jacobson et al., 2015).

Finally, collaborative innovation requires bringing together a range of stakeholders from the public, for-profit, and nonprofit sectors, as well as users and citizens in interactive arenas that facilitate the cross-fertilization of ideas, mutual and transformative learning, and the development of joint ownership of new solutions (Hartley et al., 2013: 828). However, collaboration takes time and involves high transaction costs, which means that when there are time and resource

constraints, other innovation strategies (such as market-driving innovations) will be more attractive and effective (Hartley et al., 2013: 828).

3. Methodology

3.1 Study design

A constructivist grounded theory approach was used to identify central aspects and conditions for entrepreneurial resourcefulness in the development of eldercare services. In line with the grounded theory approach, (a) the sampling and data collection as well as the analysis were carried out simultaneously and (b) multiple methods were used to understand entrepreneurial resourcefulness in two countries representing emerging and mature models of eldercare. First, senior managers of successful eldercare organizations were interviewed, followed by studying cases of successful entrepreneurial eldercare organizations. The Success Case Method (SCM) was applied for its potential to explore and gain an understanding of important mechanisms in complex contexts of practical settings. Through SCM we attempted to find answers to the basic questions regarding the organizations like "What is really happening here?" or "What is the value of the results of the initiatives taken by the organization?" or "How can entrepreneurs improve resourcefulness?" (Brinkerhoff, 2003). Successful organizations in eldercare were selected based on public and media attention, official rating, and recommendations from users and decision-makers. Addressing successful entrepreneurs in order to learn from their experience gave access to and opened up for discussions about problems, obstacles, disadvantages, and challenges faced by them as well as the institutional field as a whole. Through the analysis of the findings, a conceptual model is suggested.

3.2 Research settings, organizational cases

Indian eldercare and organizational cases in an emerging market. Eldercare in India is mostly delivered by home health care service providers. The Indian home health care market is growing at 18% per annum with seniors constituting 25 – 30 percent of this market (CII Senior Care Report, 2018). The Indian home health care market is expected to grow to around $6.21 billion by 2020 from around $4.46 billion in 2018 (Ganesh, 2018). Home health care is increasingly being seen as an attractive option for the 300 million emerging middle-class citizens (in India) as it is a cost-effective way to provide care that has been previously entrusted to a stay-at-home member of the household (Clark and Stackpole, 2017). In recent times, the coronavirus pandemic has witnessed an over 40 percent surge in the Indian eldercare market (Shashidhar, 2020).

The two Indian cases considered here to specifically understand entrepreneurial resourcefulness in eldercare in an emerging market context are Care 24 and Apollo Health Care. Care 24 was selected to explore resourcefulness in a venture-capital backed start up because many of the start-ups in Indian home health care are backed by venture capital. The other reason for the selection of Care 24 is that it is an example of an entrepreneur-driven market disruption, where the home health care start-up has disrupted the eldercare sector in India by being pioneers in creating a mobile application for finding and matching caregivers with suitable customers seeking eldercare. They continuously train their enrolled caregivers with regard to the changing care requirements that constantly arise. So far, Care 24 has applied technology effectively to overcome the various challenges of efficiency. The recent COVID-19 pandemic has seen the proliferation of health tech and tele-health start-ups and Care 24 could be representative of such organizations as a successful organizational case.

Apollo Health Care is a market leader in the Indian health care industry, founded in 1983. It has provided a wide range of services to its various stakeholders in the health-related sectors, including a chain of hospitals, specialty clinics, pharmacies, and even health insurance. Apollo has been a pioneer in integrated health care in India and provides an end-to-end solution to their patients. In their pursuit of being the one-stop solution to all health care requirements, Apollo created Apollo Home Care in 2014. The reason why it created Apollo Home Care was to create integrated care for all its stakeholders, better customer loyalty, as well as leveraging its existing brand strength. We selected Apollo Home Care as a case for discussion because it is representative of health care organizations in India who can possibly foray into home health care as a step towards focusing on integrated care. Another reason for selection of Apollo Home Care is that it is a part of a highly successful health care group which diversified from Apollo Hospitals to providing a range of products and services all addressing the health care needs of its stakeholders.

Swedish eldercare and organizational cases in a mature market in transition. Sweden has a long tradition of public, locally financed, and administered responsibility for poor, frail, sick, and older individuals who cannot support themselves or get support from their family (Davey et al., 2013). Eldercare is regulated in laws and guidelines, sometimes involving contradictory or competing aims regarding social and health care services. Municipalities have the main responsibility for social eldercare and home health care, while county councils are responsible for coordinating home health care to elderly people with multiple diseases (i.e., frail older people). In recent times, the privatization of eldercare services has increased slightly and in different forms, e.g. in intrapreneurial forms. About 24% of all eldercare is provided by private companies through formal contracts with and funded by the municipalities (Bergman et al., 2016).

In the mature market of eldercare in Sweden, the two studied entrepreneurial organizations are the Norrtälje model and the Tjörn model. The Norrtälje model provides health and social care through an integrated provider and purchasing system. As Swedish hospital care is generally provided by regions and social care provided by municipalities, the Norrtälje model is a unique example of an integrated organization embracing the two services into an overall system focusing on elderly patient groups. Technology, integrated care chains, and special management give Norrtälje its entrepreneurial status (Andersson Bäck and Calltorp, 2015). The Tjörn model (selected due to its successful and early-developed intrapreneurial form) is opting for the best homelike environment for its clients, based on the belief that autonomy, responsibility, and involvement in decision-making for elderly people as well as for the operating staff represent means for fulfilling such aims. Thus, the selection of Swedish cases represent pioneer and acknowledged successful organizational forms of eldercare. Furthermore, both organizations operate in line with the Swedish institutional context of health and social care, meaning that services are based on tax-funded resources that are publicly pooled and redistributed to citizens on the basis of need and estimations made by professional care coordinators (Schön and Heap, 2018).

3.3 The research process

Purposive sampling was used to select (a) successful eldercare senior managers in each country (n=24 from India, n=24 from Sweden), (b) successful eldercare entrepreneurial organizations providing eldercare in their national contexts (four organizational cases: two cases from India and two from Sweden). Thus, the organizations studied (described below) represent case studies that highlight the ways in which entrepreneurs and intrapreneurs manage the existing constraints in their respective institutional contexts.

Data collection was mainly performed through interviews with senior managers (including CEO/directors, founders/co-founders). The interviews were conducted in isolation to prevent any interruptions and group influences even when they were conducted at the workplace. Most of the interviews were recorded and transcribed; otherwise, notes were carefully taken. Transcripts were cross-checked for the accuracy of each word transcribed using the original audiotapes. The interview data was collected till the point of data saturation when no new themes emerged from the subsequent interviews. Following the guidelines of Charmaz (2014) and Hennink et al. (2016), we continued interviewing even beyond the code saturation point of 14 till we reached meaning saturation at 24 interviews. For the case studies, we only used primary sources of information about the organizations.

Analyzing transcripts from interviews and documents was done simultaneously with data collection to note any emergent themes from the analysis. Any emergent theme was included in subsequent interviews to explore new areas, and any redundant areas were deleted from the interview guide. Open coding was done line-by-line (first-order codes) and, subsequently, selective codes and themes were identified that further constituted the various categories (second-order codes). We used the latest version of the qualitative data analysis software Atlas ti (ver 9) to conduct the coding and content analysis. Themes and categories that defined the two institutional contexts and the factors describing entrepreneurial resourcefulness were identified. The outcomes of entrepreneurial resourcefulness were explained with the case studies of the selected organizations developed using the Success Case Approach. We used the narratives of the managers interviewed as a primary source of information for developing the case studies.

4. Resourcefulness: Entrepreneurial capacity to handle constraints

The analysis describes three major themes of entrepreneurial capacity (the set of activities) in terms of creating resourcefulness and overcoming/managing three kinds of constraints: (1) financial constraints and cost diseconomies, (2) human resource constraints, and (3) service market constraints. These are described below in three subcategories of (1) the problems that constitute the major constraints faced by the organizations, (2) the measures taken by the entrepreneurs to overcome these constraints. Lastly, (3) offers examples of best practices that represent the antecedents of entrepreneurial resourcefulness. The results from India are in focus and the results from Sweden are in these aspects added to offer contrast or support where appropriate.

4.1 Resourcefulness to overcome financial constraints and cost diseconomies

There were various *financial constraints* due to different kinds of inefficiencies in the industry that create cost diseconomies and also make eldercare less attractive for the prospective customers (elders). For example, the presence of various market inefficiencies, such as a surplus of unskilled workers, causes price sensitivity among customers. This puts pressure on the margins for these care services. There is also a lack of insurance coverage in countries such as India. This makes services less affordable among users. Moreover, the lack of awareness regarding these services causes lesser demand and cost diseconomies. In Sweden, the financial constraints are related to priorities and a grey zone of responsibilities related to eldercare. Neither the municipalities nor the county councils give higher priority to the needs of old people living at home with multiple diseases compared to individuals who physically visit care centers.

You can't fight reality. If the elderly people truly do not have money, they are never going to pay a 60% margin, so that is a reality to be accepted (…) No guarantee, no safety, no security. So, we are like, I think that it is a function of resources, how to solve industry problems. (co-founder, tech-based home health care startup, India)

I'm sorry to say, but the priorities are in practice given to the people attending the primary health care centers. This results in better numbers [i.e., key performance indicators]. We may have the responsibility for coordinating the elderly with multiple diseases living at home but it's obvious that we do not yet have enough resources and the work processes to do so. (senior manager, primary care, Sweden).

Unorganized services are a related key constraint. The entrepreneurs in eldercare in India saw an opportunity to organize the sector, perceived as non-unorganized, through start-ups that will create a workforce of skilled caregivers to deliver a unique value proposition in the market. Most of them identified the opportunity amidst some personal experience, which created a sense of commitment and purpose to do something innovative and disruptive. The entrepreneurs in the Indian eldercare sector consider themselves "market-driving" since they are pioneers in the development of organized eldercare in India, where it is mostly unorganized. In Sweden, the gap between resources and needs in eldercare services is often understood as being due to efficiencies and sloppy organizing on the floor, which should be solved by innovations and rationalizations without any clear specifications on how it should be done. At the same time, there are conflicting laws and regulations, such as regarding the right of service, the responsibility for offering services to frail care recipients, as well as of the quality of care and working conditions. A number of policies have been implemented to support collaborations between municipalities and county councils, without success.

Measures taken to overcome the constraints. Entrepreneurs can bring resources to eldercare such as financial strength and power by being able to attract venture capital through their trustworthiness and know-how of the markets or by having a blueprint for using and adapting technological solutions and innovative services to deliver superior value and at the same time making efficient use of capital. Some of the measures taken by the entrepreneurs to overcome the financial constraints are as follows:

Technology-based solutions for resourcefulness. In such a policy-uncertain and under-developed eldercare sector, one Indian home health care start-up (Care 24) has tried to create a whole new model of caregiving where they have used technology to disrupt the market by changing how care receiver needs are assessed and matched with suitable caregivers using a method similar to aggregator models used in other match-making contexts (e.g., finding a cab). In a very short time, with limited resources, and by using a technology-enabled platform, they have been able to grow to a massive scale by having a workforce of nearly 4,000 caregivers. This reaffirms the role of entrepreneurial resourcefulness in terms of shaping technological innovation in the industry. As the co-founder of Care 24 puts it:

Technology helps us a lot because we standardize and "productize" any best practice. (…) The technology team is super-excited because they are able to build something new. (…) We believe in automation because that is what will make things affordable.

The Norrtälje case in Sweden optimized the use of information technology and documentation strategies to enable more coordination of the integrated care between the responsibilities of municipalities and county councils. They work actively with the organizational environment to allow providers of health and social care services to work together to provide the right mix of services, including preventative services and services focusing on clients making transitions across sectors. Hereby, the model *created efficiencies through integrated care*, where the overall management group helped optimize organization and relevant overall work.

Creating efficiencies through innovations. To counter the problems faced in India, the organizations are setting up eldercare as an extension of their existing health services provided by hospitals and nursing homes (organizational innovations). This helps them to better utilize their existing capacities (service innovation). Furthermore, it helps counter the increasing cost of procuring additional resources such as land, labor, and capital (process innovation). For example,

one of the leading health care companies in India recently ventured into eldercare, and according to the CEO of the eldercare venture:

(…) if you look at the important challenges, which are there, one is that the cost of health care is going up. Secondly, if you have reached an 80–90 percent occupancy (bed occupancy in hospitals), the only way that you can efficiently improve your bottom line is by improving your revenue per occupancy of bed, and that is a limited capacity (…) So, the next option we have is to spend a couple of hundred crores (roughly 2 billion) to build up an infrastructure, which is going to take a couple of years, and the cost of real estate, the cost of technology infrastructure is not getting cheaper. Even profitability is coming down given the challenges of regulation in terms of profits from implants and consumables, medicines, etc. So, we have to find more new ways to efficiently utilize the existing system of operation. (CEO, India).

Entrepreneurial passion for efficiency. Another factor further magnifying the challenges to attain efficiency is the existing price sensitivity in this sector, both in India and Sweden. In India, this price sensitivity is due to a lack of financial resources among older people, resulting in them not being able to afford to pay for caregiving services, which are typically highly priced due to existing cost diseconomies. In Sweden, the allocated public funding to eldercare is modest and based on the budget framework. Hence, entrepreneurs look at innovative ways to create more value for the eldercare customers (patients and older people) and try to integrate user and economic values and perspectives into service delivery. They describe a passion for creating efficiency and achieving economies of scale through standardization and autonomy.

At any age, we have things for kids in this country, at least things people can afford, we have things for middle-age people. For elder people, even if you have money, you don't have resources. And in our social structure, we don't have a lot of old-age nursing homes, we don't believe in keeping old people in old-age homes, but we also don't have the structure to take care of the mid-

home. And so, there was this huge gap that existed and given that we are entrepreneurs, we come with a business bent of mind; and this is not like charitable work, honestly, but at least people who can afford should get the service first. We will get into the market, and then we will see where it goes. (co-founder and COO, an Indian home health care company backed by venture capital).

As we can see above, the entrepreneur identified a deficiency in the existing system of health services and made it her passion to create an affordable solution for the old. The manager was driven by a purpose to address a social gap by organizing the resources around it in the most efficient way. The passion for efficiency also exists among managers in Sweden, to make the most value for old people, their relatives, co-workers, and local society.

I want to create the kind of eldercare I would also like my mother and father to experience, an eldercare that is in line with the human values and traditions we have here, in this part of Sweden, and at the same time is sustainable, which means cost-efficient. (senior entrepreneurial manager, Sweden).

Thus, the lack of resources is experienced in this sector in both contexts: in Sweden, with an established system of social security, but where resources are not sufficient to cover current and future situations, and in India where the social security system is weak and lacks adequate insurance coverage from taxes or insurance for eldercare and the entrepreneurs. From a financial perspective, the key driving force behind the Norrtälje model (Sweden) was a local crisis – the threat that the local hospital would be closed. This galvanized the resolve of the community to think of new ways to provide care: aiming for a simultaneous approach of policy and financing to create a climate that may enable a better integration of resources and staffing. The model was organized as an attempt to rationalize health and social care by bringing together resources from two administrative domains and giving the new CEO and his management team responsibility and freedom to lead and organize. The idea was to get more and better care using the same amount of

resources. Hereby, the Norrtälje model is to be considered an innovative kind of intrapreneurship. The Tjörn model is also an innovative form of intrapreneurship where the authority gave local management freedom to handle finances and staff for each house/unit separately. Freed from overhead costs from the public mother organization and with help from its own creative and strict accounting and use of resources, the model has generated large surpluses to be used to benefit older clients and staff. The surpluses have been invested in activities as well as training and health care prevention and promotion. As a result of satisfaction with the environment and working conditions, the organization does not experience the problem of attracting and retaining staff that is common in Sweden in general.

4.2 Resourcefulness to overcome human resource constraints

The major human resource constraint that was identified concerns *the unavailability of skilled manpower* in both emerging and mature markets of eldercare. There is a supply gap and a skills gap. This means greater efforts, costs, and search activities to recruit skilled care workers. For example, according to one of the founders of a successful new venture in eldercare in Mumbai, India:

You will find people who are really good, but they want to work with some institution set up, then there are families who don't allow their girls to work in families due to the security reasons. Because of security, because of stigma, it is very, very difficult to get quality caregivers. So, my number one challenge is that I could have grown 10 times of what I am currently. I could have hired 1,000 people. I demand satisfaction but I am not able to find quality caregivers. (founder, a Mumbai-based eldercare start-up backed by venture capital).

The lack of workers is also due to job attractiveness. Jobs in hospitals and other health care institutions (such as clinics or nursing homes) are more attractive in both mature and emerging eldercare markets. In India, there is a social stigma attached to working as a home caregiver. In

Sweden, the status of the job is low, and the hard and dirty work pays low wages. The work is provided by qualified staff, but a large share of employees lack full competence and skills. This poses a significant challenge in the growth of new ventures in eldercare. *Measures taken to overcome this constraint* described in both these institutional contexts included focusing on the attractiveness of the jobs through:

Training and retaining care workers. Managers use available resources to increase competence among care workers.

The first biggest challenge is to get the right people at the right place. You don't get trained nurses, nursing assistants, physiotherapists. Even if you get them, you have to train them, you have to groom them. You have to groom them specifically to work in the home environment or out-of-hospital environment. (CEO, India)

We constantly look for resources (…) in terms of time, money, and available courses and lectures (…) to give the assistant nurses opportunities to develop their skills. We have understood that this has wider implications than we first thought. It often means increased value and that they shoulder more responsibilities. It is the key to success. (senior manager, Sweden)

Care workers who "walk the talk." Nursing assistants with the ability to take responsibility for their work and care recipients is a goal in Swedish eldercare, shown in both words and deeds.

Yes, yes, yes, it is special here in Tjörn. I enjoy it here and I like our ways of working. The staff has a lot of knowledge. It's good because I can't do everything myself. There should be a leader for certain things, but our nursing assistants have a tremendous ability to lead and distribute, and we do that together with our residents. (coordinator for the staffing and planning group, Tjörn, Sweden)

Creating a positive organizational work climate. Entrepreneurs continuously strive to create a positive work environment by managing the caregivers' burden and stress by constantly coaching and guiding them.

If the staff is not happy, they are not going to be efficient and then their behavior starts to show up. (manager, Sweden).

Employee empowerment. Human resources should empower the staff/nursing assistants to act responsibly and involve staff as well as older clients in their health and care in Sweden. It implies staff responsibility for overall management and daily operations, involvement in self-care, and involvement in the design and implementation of health and social care activities.

4.3 Resourcefulness to deal with service market constraints

Constraints are shaped through *national conditions for the market/industry* that create different challenges for establishing a value chain and a sustainable enterprise serving the needs and satisfaction of the various stakeholders. These constraints are created by:

Policies and regulations. In India, there is a lack of adequate policies specifically catering to the eldercare sector. Furthermore, there is also a lack of a suitable definition of organized eldercare: what constitutes eldercare and who is eligible to take care of elders. Eldercare is still highly unorganized (HelpAge India, 2019). In Sweden, there are numerous policies regarding various aspects of eldercare. Some regulations can be in conflict and prevent innovations, such as regulations regarding social care and health care, the right of care and working conditions, and regulations concerning responsibilities and coordination with regard to providing eldercare to frail older individuals.

Customer awareness. In India, there is a lack of awareness regarding eldercare services. Indian customers also have limited awareness as to what constitutes an appropriate level of service. In

Sweden, on the other hand, there is a high level of awareness regarding eldercare services; in other words, high needs (as a result of demographic developments, increasing numbers of frail older individuals having multiple morbidities, risks from chronic diseases, including the demand for support from many different health and social specialties). The new generation of old people in Sweden has high expectations in terms of quality, access, and well-coordinated health care and social services. They also expect more room for personal autonomy and choice of services.

Availability of public health facilities. Eldercare is still not accessible to a large segment of elders in India. For example, according to the HelpAge Indi report *Home Care for Elderly in India*, 62.1 percent of the elderly population in India does not have access to long-term care facilities (e.g., institutionalized care). In Sweden, there is a high level of availability to home care service and home health care. There is, on the other hand, poor availability to residential houses where the older person has his or her own apartment with an individual external address. This means that the people living in residential houses have severe needs and the majority (85%) have dementia.

Accessibility to eldercare. Health insurance in India does not cover home health care or eldercare. The respondents in India have consistently said that "there is no health insurance for elderly people" or "insurance should cover home care" or "it should be included in people's pension plan." In Sweden, eldercare is funded by the local municipalities (through local taxes) and primary care is funded by county councils (and regional taxes). This means that every old person has the right to receive eldercare, while access to residential eldercare is subject to formal estimations of needs and availability. Hospital beds only exist in hospitals, and a person who is considered having been medically treated leaves the hospital, after which the municipality has to arrange care according to the client's needs.

Some *measures taken to overcome the hurdle* posed by the market or industry constraints listed above are as follows.

(Re)defining service level expectations through disruption. Any pioneer setting up a new venture in an underdeveloped sector would be market-driving, and they will face resource constraints. However, the underdeveloped sector also offers an opportunity to create the most significant impact, which is why entrepreneurs act more resourcefully in contexts where they have an opportunity to create and define the services of an entire sector. This extends the definition of resourcefulness from "creating more for less" to "creating disruptions" at the formative stages of an industry. For example, according to one respondent in India:

This is an area where you can put in very little effort, but the returns are so high when it comes to gratification and when it comes to really creating an impact. Impact is not just about well-being and happiness; it is also about solving an existing problem, and the problem at that point in time and even today happens to be specialized care. (…) It is all about creating a change in the country, and a little bit of disruption in terms of how we view the elder issues and what eldercare means, and at the end of the day, it is about creating a population that believes in active and healthy aging, which is not really a priority for us yet. In an Indian context and not in a global context, we have provided specialized care through assisted living homes, where we have provided services specialized around diseases such as dementia to end-of-life care. We have three homes now, and anywhere you walk in, our systems and processes are such that you will feel like you are in a home and not an institution. (COO, eldercare organization, India).

Innovations through integration – integration through training, culture, and collaboration. All successful organizational cases describe the importance of an integrated approach to care through stakeholder management and service innovation as the key to better efficiency and retaining customers in the long run. Resourcefulness comes through service innovations; for example, by creating efficiencies and focusing on employee training. It also outlines the importance of

rewarding positive intrapreneurial behavior inside the organizations. As the CEO of Apollo Home Care, a home health care company, says:

The loyalty of the customers is vulnerable today unless you constantly engage. Earlier health care has been very transactional in nature (…) that never engaged with them (the patients) in the interim, never tried to proactively work with them, so the lifetime value of a customer was never valued in this industry. It is only after learning from other industries that people have now started looking into the LTV (lifetime value) in this industry. And I think from that perspective, there is no better tool than home health care to create a better LTV for a client. (CEO, India).

Hence, resourcefulness creates market-driving entrepreneurs that shape the institutional logic at its formative stages**.** Apollo Home Care has successfully overcome the hurdle of industry constraints by creating integrated care using an LTV approach. Through this, they provide end-to-end solutions to all the stakeholders in relation to health care, including the subset of the eldercare sector. They are also able to leverage the existing brand strength in the health care sector. Furthermore, by using a customer lifetime value approach, they can also prioritize the allocation of resources to the appropriate stakeholder that will create and deliver the best possible value to the end-customer (i.e., the care recipient).

The approach to creating integrated care and stakeholder management in Sweden is important but as the constraints differ, the measures taken also differ. There is a stronger focus on person-centered care processes, which is integrated and included in overall management, training, leadership, and care-coordinating activities. According to policy, care maps should be developed for frail older people to promote integrated care and improvements of person-centeredness, quality, and efficiency. In the Norrtälje model, the policy of integrated care is used as a means to put the care maps in active use. Additionally, it was possible to actively engage both the community and

the workforce in designing and making the change. The challenge of changing organizational culture – a prerequisite for integrating care – may be more difficult in other settings that are either larger or exist in more open environments. Although the success of the Norrtälje model is partially based on its local focus, it is clear that these local efforts can be affected both positively and negatively by the broader environment. The model could be developed only because the Stockholm City Council was willing to be a partner, but as the policies of that level of governance change and as other national initiatives, such as the patient choice legislation, came into play, the local program had to adapt in order to survive. This is a typical example of how conflicting policy goals at both national and local levels interplay and are interrelated.

Thus, the model addresses a problem faced in many countries – providing integrated health and social care in a decentralized system where the organization and funding of health care services differs from the organization and funding of social care services. The experience of the Norrtälje model suggests that one way of promoting the integration of health and social care is to start with a transformation that aligns these two sectors in terms of high-level organization and funding. This transformation then enables changes in operations and management that can be translated into changes in care delivery. This "top-down" approach can be based on national priorities and policies such as care plans; ultimately, however, it is only successful if culture, resource allocation, and management are changed throughout the system.

5. Limits of resourcefulness

The analysis also found *limits of entrepreneurial resourcefulness*. Resourceful eldercare entrepreneurs are disrupting the existing health care space, and they promise to bring more efficiency and economies of scale to create affordable solutions to a complex problem further complicated by an ever-increasing aging population that poses a demographic challenge. A unique

case showed how to build financial strength and resources for preventive as well as promotional activities (including training and facilitating the care burden) that are advantageous to clients, staff, and the overall business. However, in their pursuit to overcome the demographic and socio-economic problem caused by aging, entrepreneurs are creating business models increasingly highlighting the role of technology replacing people in eldercare both in emerging and mature contexts. It is noticeable, though, that sustainable models of eldercare highlight the crucial importance of people-centered care addressing the complex needs of an older person. This poses greater challenges for eldercare organizations unable to merely circumvent many caregiving issues simply by implementing resourceful solutions to achieve efficiency.

Some of the limits of resourcefulness identified from the analysis are as follows:
Inability to overcome the challenge of attracting and retaining care workers. Healthy and active aging requires person-centered care, while at the same time, it is difficult to attract people to eldercare. As put forward by various entrepreneurs in Indian eldercare organizations, the greatest challenge for eldercare is mobilization, which is getting people to work in home health care because of its stigma. This means that getting care workers to work in eldercare will require higher wages and greater search costs for recruitment. Add to that the training and development cost for care workers in emerging markets, and we see that remaining sustainable as a start-up becomes a daunting task. In such a scenario, technology seems to be the obvious alternative to offer a solution to a mounting problem. As stated by one of the entrepreneurs in an Indian eldercare organization: Technology will help us keeping our frontline managers more up-to-date and various training inputs can be sent to the frontline managers and caregivers from time to time by the vertical heads. However, this leads to many trust-based issues and reduces the person-centeredness of the care.
Technology-based resourcefulness may not result in person-centered care. As one of the entrepreneurs of a successful eldercare start-up puts it: “we are not sending robots to home, we are

sending well-trained caregivers to the elders at home." Another entrepreneur outlines the limits of technology-driven resourcefulness and the extent to which it should be used in organizing eldercare:

I think the use of technology is important. There is no second thought, I think. Technology will play an important role in care, and it is the need of the hour, no question about it. To what extent will we go and use technology is a question. If we talk about using robots to serve people, I don't think that is what we need. So, I think technology has to be used in an appropriate way. It brings efficiency, brings transparency, this is its critical part.

From the above entrepreneurial narratives and the earlier discussions, it is clear that technology will play a vital role in the success of entrepreneurial resourcefulness in eldercare. Nevertheless, in the pursuit of "doing more for less," many people-related issues may be overlooked, which could impact the ways in which the caregiving sector is organized in its formative stages in India, where resourceful private entrepreneurs predominantly drive eldercare.

Resourcefulness will not solve value conflicts. When we say people-related issues, we mean caregiver-related issues such as stress, job satisfaction, burden, communication or dialogue, values, etc. that arise due to the ongoing demands of patients and their relatives. For example, as stated by one of the senior care managers:

The other part of management is to develop people, understand their task, how to keep people, their values, how to behave, how to solve conflicts. What motivates me is to understand and create an environment where people can be happy: our customers, the elders, and the staff. And what I find is that we can have an environment that is both healthy and efficient, but those two go together. If the staff is not happy, they are not going to be efficient and then their behavior starts to show up.

Another Swedish "intrapreneur" of an assisted living facility in Sweden highlights the importance of coaching, communication, and dialogue in maintaining a learning climate inside the organization:

My caregiver nurses should know how to speak; they should know how to speak themselves and how to speak with the elders. And when they report something to me, they should speak on a learning level. I talk a lot with the elders and also with them (the nurses) and ask them – what can you learn from this? Why is this happening?

Hence, resourcefulness cannot solve these people-related issues. Leadership, coaching, and communication are key for solving day-to-day problems and creating an organization where leaders and workers strive to improve care delivery by keeping the elders (patients) at the center of all processes. In the mature context, person-centered care is integrated into the care process, included in overall management, care coordination activities, training, and leadership.

6. Discussions

This study presents insights concerning entrepreneurial resourcefulness through its capacity to handle constraints in eldercare in two institutional contexts: India and Sweden. The conceptual model of entrepreneurial resourcefulness also suggests potential antecedents and possible outcomes, described in the text below and summarized in Figure 1.

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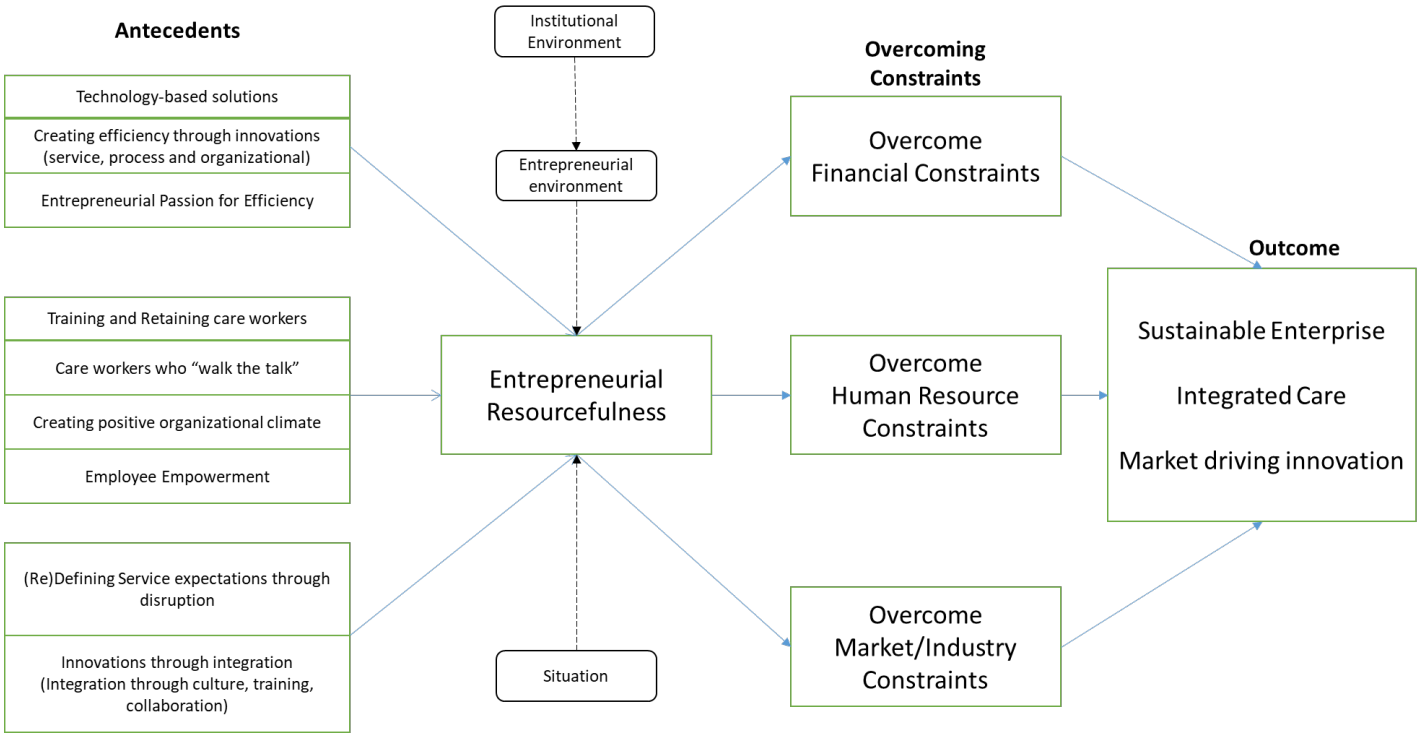

Figure 1 - Antecedents and Outcomes of Entrepreneurial Resourcefulness

Entrepreneurial environments and situations constitute the mediating variables to resourcefulness, while institutional environment constitutes the moderating variable to resourcefulness, which is based on previous studies on entrepreneurial behavior (e.g., Mishra and Kumar, 2000; Kumar and Borbora, 2019). The possible outcomes of entrepreneurial resourcefulness are as follows: *Market-driving innovations.* The case of Care 24 has shown how technology will lead to market-driven innovations. This will shape the industry best practices for recruitment and matching caregivers to suitable customers (elders) to ensure efficiency and delivering better value (e.g., less travel time, greater proximity of care workers to their respective patients, punctuality, accurate matching between caregiving skills and customer requirements, etc.). In the Swedish case of Tjörn,

the intrapreneurial organization has resulted in financial strength that can be used innovatively and constructively to benefit clients and staff.

Integrated care. The case of Apollo Home Care has shown us the role of eldercare in creating integrated care for providing an end-to-end solution to the various stakeholders in a health care ecosystem. We also saw how Norrtälje is using care maps to create a better service mix and actively engage its various stakeholders in the process to ensure better care coordination.
Sustainable enterprise. All four cases we have discussed – Care 24 and Apollo Home Care (in India) and Norrtälje and Tjörn (in Sweden) – have been successful. They emerged as sustainable enterprises since they have understood the constraints in their given industry/market context. They also took appropriate measures to address the challenges posed by the constraints and have shown resourcefulness through the ways in which they have organized their business and by their entrepreneurial behavior.

Further, resourcefulness seems to be the key to the creation of successful entrepreneurship both in mature and emerging institutional contexts. In the long run, however, the sustainable competitive advantage of these enterprises would require:

1. Favorable policies for the growth of organized eldercare with people-centered care processes to ensure better value and safety for the old people using the services.
2. Leadership and coaching will be the key to attract and retain skilled care workers, create effective strategies to adapt to the dynamic industry context, and continuously innovate by creating a learning climate.
3. Possibility to build local financial strength for investments in prevention and promotion in favor of central stakeholders (i.e., the elders and first-line staff).

The study has some limitations. First, all respondents were entrepreneurs and intrapreneurs (eldercare managers) from only two countries (i.e., India and Sweden). Second, the study lacks empirical and statistical testing of the relationship between the antecedents and the entrepreneurial resourcefulness. However, we believe that the quality and reliability of the qualitative data gathered from the entrepreneurs is sufficiently good to provide us with some direction for entrepreneurial development in varying institutional contexts. Moreover, the study attains triangulation on at least two levels: data from different countries and analysis by multiple researchers. This enhances the importance and relevance of the findings in this study. Future studies should be conducted to establish the empirical relationship between resourcefulness and the various factors contributing to this. Finally, the impact of the mediating and moderating variables, such as institutional environment, situations, and the entrepreneurial environment, on entrepreneurial resourcefulness needs to be examined quantitatively in future studies.

7. Conclusions

This study establishes the important role of resourcefulness in entrepreneurial success by overcoming the resource constraints that exist in both mature and emerging institutional contexts. The proposed conceptual model could be the starting point for discussions among policymakers and industry stakeholders in terms of creating an environment conducive to developing an integrated, sustainable, and value-based health care ecosystem. Further, it can help municipalities better understand the role of intrapreneurship in maintaining a sustainable health ecosystem as well as ensure the allocation of resources by government bodies to promote integrated care. Furthermore, it can assist governments in emerging institutional contexts such as India to adopt suitable action-oriented policies that will help develop entrepreneurship in integrated care, which would strengthen the health care ecosystem by complementing existing public health facilities. The article could create appropriate benchmarks for continuously evaluating and improving the

performance of public health institutions, opening up for further studies and learning in contexts, which claimed to be in great need of development.

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Factors influencing adoption of green banking practices: Evidence from commercial banks in India

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Abstract

This study aims to provide insights into the adoption of the notion of green banking practices and identifies various factors influencing adoption of green banking practices by commercial banks in India. Data were collected from 161 banking officials of commercial banks located in Delhi NCR region, India. The study found six factors significantly influencing the adoption of green banking practices by commercial banks in India. The identification of factors influencing adoption of green banking practices will be helpful for the banks, regulators and policymakers to promote the development and implementation of green banking practices in India. This study is one of the first efforts on assessing adoption of green banking practices by banks in India. The findings provide significant insights into the factors that influence adoption of green banking practices by the banks in India. This study also contributes to extant dearth of literature on green banking in the Indian context.

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Introduction

Today rapid exploitation of natural resources, climate change and global warming are some of the most alarming issues in the world. These issues have been exponentially increased due to the adverse impact of operations and activities of companies all around the world (Kumar & Prakash, 2019). There is a huge pressure on corporate world to adopt practices that reduce negative impact on the environment. The discernible shift in consumer expectations regarding environmentally friendly businesses and the concerns of diverse set of the stakeholders (i.e. government, client, regulator, supplier, NGOs etc.) compelled companies to "go green" (Fernand & Fernand, 2017; Bihari, 2010). Adoption of green practices essentially calls for development and implementation of environmental friendly technology and reduction in carbon footprints (Bose et al., 2018).

Banking institutions being the growth engine of the economy has also changed the way they do their business. In the past decade, the notion of green banking has been emerged which has been widely adopted by the banks to address environmental considerations in banking operations (Bahl, 2012; Chen et al., 2018). Banking industry in many developed and developing countries are adopting green banking practices to contribute to environment protection and sustainability (Biswas, 2011; Islam & Das, 2013; Shamshad et al., 2018). Green Banking is an umbrella term referring to practices and guidelines adopted by the banks to inculcate environmentally responsible conduct in the banking operations. Development and implementation of green banking practices aims to make banking processes and the use of IT and physical infrastructure efficient with zero or minimal negative impact on the environment (Kaur, 2016). Green banking strategies involves the use of environmentally friendly practices at every level of the operations as well as to consider environmental impact in projects investment of commercial banks (Ahmad et al., 2013).Green banking has been considered as the tool to achieve sustainable development as it aims to minimise the negative impact of economic activity. The adoption of green banking practices have been

rapidly increasing in India (Chaurasia, 2014). Numbers of studies have been conducted in the area of green banking strategies, various dimension of green banking dimension and implementation of green banking practices by the banks in developed and developing countries (Bihari, 2010; Chaurasia, 2014; Islam & Das, 2013; Shamshad et al., 2018). However empirical study pertaining to various factors influencing adoption of green banking practices by the commercial banks could not be traced and this is the research gap. The present study attempts to fill this gap by empirically identifying the various factors contributing to the adoption of green banking practices by the commercial banks in India.

The rest of the paper is organised in four sections. Section 2 discusses review of relevant literature related to green banking. Section three presents data and research methodology. The results and discussion are provided in section 4. Finally, section 5 concludes the study.

Background

Banking industry plays a very crucial role in the development of the country therefore, it has become imperative for every banking organisation to incorporate and integrate environmental considerations in its banking operations. Adoption of green banking practices by the banks mitigates adverse environmental impact and helps the overall reduction of external carbon emission and internal carbon footprint (Bhardwaj and Malhotra, 2013; Julia and Kassim, 2019; Kumar, 2019).The notion of green banking has emerged from the broad concept of sustainable development. The term sustainable development is most commonly defined as development that meets the needs of present without compromising the ability of future generations to meet their own needs (WCED, 1987). Economic environment and social are three dimensions of sustainable development. Green banking is based on the principle of sustainable development (Tara et al., 2015). It specifically addresses the environmental dimension of sustainability (Kumar & Prakash,

2018). Green banking requires development of sustainable product and services i.e. environmental, social and ethical fund (Ullah 2010; Sudhalakshmi & Chinnadorai, 2014). Bank should give priority while financing to the sector that have minimal adverse impact on the environment (Kumar et al. 2020; Javeria et al., 2019). Biswas (2011) argued that implementation of green banking practices is an integral part of banks environmental policy and also serve as a means for materialising its corporate social responsibility. Nanda & Bihari (2012) also suggested that adoption of green banking practices help in improving brand image and achieving higher returns in longer run. Jha & Bhome (2013) suggested various green banking strategies adopted by the banks in India like green loan, going online, green account, use of solar penal, green credit card, mobile banking etc. Ullah (2013) mentioned following important characteristics of green banking operations strategies; online banking and automation, investment incorporating environmental issues and promotion of green industrialisation. Rahman et al. (2013) emphasised on making banks greener by changing daily operations and activities through green investment management, internet banking, branchless bank, environment management system. Lalon (2015) concluded the most important benefit of green banking are deforestation, creating environment, environmentally friendly business activity, lending at lower rate. Bukhari et al. (2019) emphasised on developing new product and services that promote environmentally friendly operations and sustainable development. Goyal & Joshi (2011) stressed on significance of green banking practices to further avoid environmental and social crisis as the result of irresponsible lending practices of the banking institutions. Outside pressure and regulatory guidelines have played a crucial role in promoting green banking practices (Kumar & Prakash 2019). Ahmad et al., (2013) highlighted the significance of factors like ethical values, environmental protection and sustainable development responsible for adoption of green banking practices by the banking institutions. Number of studies have stressed on the positive relationship between the financial performance of the company and

extent of adoption of green practices (David and Shameem, 2017). Following figure 1 show the conceptual framework for the study derived from the review of literature.

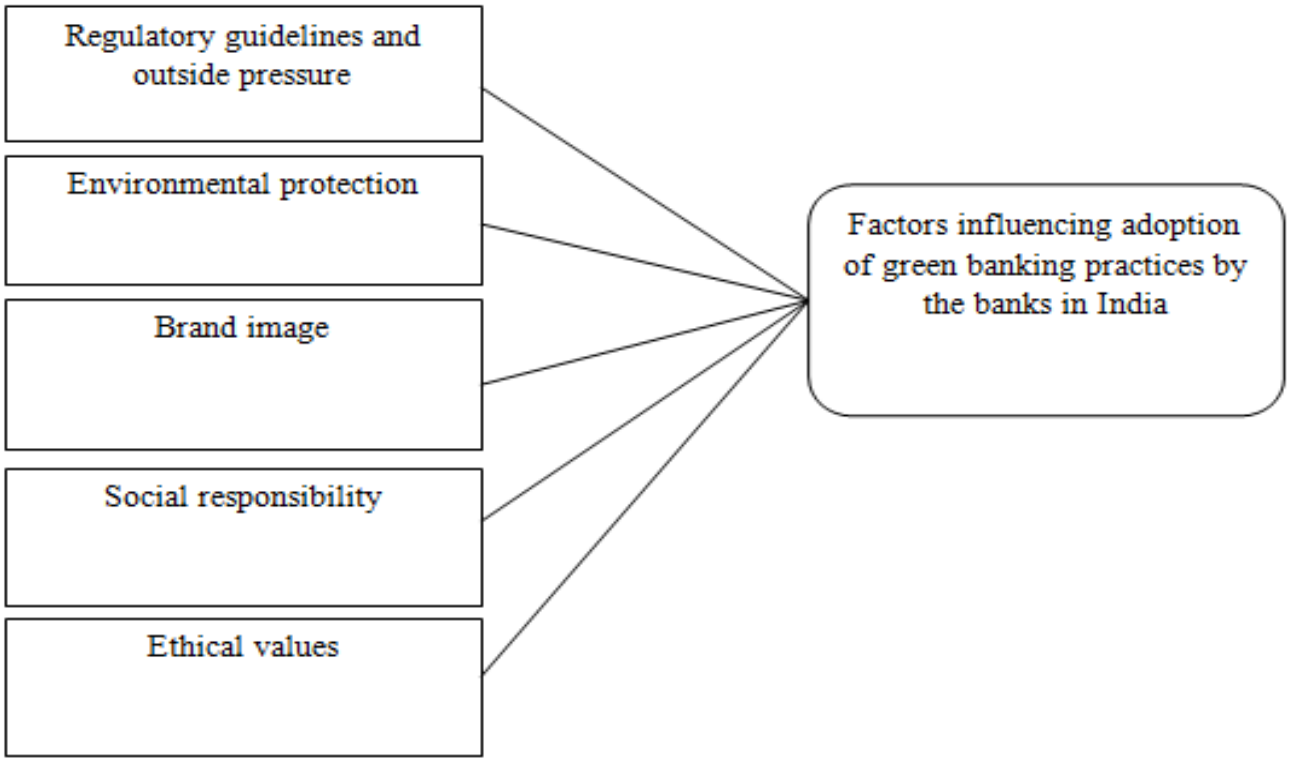

Figure 1.Shows the conceptual framework for the study.

Research Methodology

Both exploratory and descriptive research design have been used in the present study in order to get insights and understanding about the various factors influencing adoption of green banking practices by the commercial banks in India. The following research questions have been formulated in the present study;

RQ1: How the notion of green banking has been evolved?

RQ2: What influence the current state of green banking practices adopted by the banks in India?
RQ3: What are the various factors that influence adoption of green banking practices by the commercial banks in India?

To answer the above discussed research questions following research objectives have been designed in the present study.

- To examine the most pertinent issues with regards to green banking in India.
- To identify the various factors influencing adoption of green banking practices by the banks in India.

Sampling and Data collection

The officials working in PSBs (public sector banks) and private sector banks operating in India were considered as the sampling unit in the present study. Banking officials involved (i.e. general manager, chief manager, deputy general manager, zonal manager, regional manager & branch manager). Banking officials were selected as the sampling unit because they are involved in planning and implementation of green banking practices in their respective bank. Purposive sampling method was used to collect the data. For data collection, questionnaires were personally administered at various head offices of PSBS and private sector banks in Delhi NCR region and also self-administered questionnaire was sent online via LinkedIn and email. The data was collected in the period 4th September 2019 to 28th December 2019.

A total of 89 questionnaires were personally administered and out of total 289 online distributed questionnaires, only 72 complete questionnaires were received (response rate of 24.91%). Hence, 161 questionnaires were used in the present study for the purpose of final analysis. . Total 161

usable questionnaires represent respondents working in 72.5% of total PSBs and private banks in India.

Results and discussion

The respondents in present study were 161 officials of working in PSBs and private sector banks in India. Majority of the respondent (69.37%) were working in PSBs in India and rest of the respondent were from private sector banks. The sample represents 79.71% and 63.42% of the total PSBs and private sector banks in India respectively.

Exploratory factor analysis

EFA was used in the present study to identify the various factors influencing adoption of green banking practices by the banks in India. EFA statistical technique is used to extract underlying factor structure from the large set of variables. SPSS Version 20was used to analyse the data set. The reliability of data set was checked through Cronbach's alpha coefficient (α). Its value should be greater than 0.700 so that items can be used together as a scale (Hair et al., 2010). In the present study Cronbach's alpha coefficient (α) is .936 as shown in table 1.

Table 1 Reliability statistics

Cronbach's Alpha	No. of items
.936	32

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.891, adequatly higher than .60 (Hair et al., 2009). The Bartlett's test of spherecity was also found to be significant (chi-square

=2558.969 p<.005). Thus, sample size of 161 was considered to be adequate and satisfactory for conducting the study.

Table 2. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.891
Bartlett's Test of Sphericity	Approx. Chi-Square	2558.969
	df	496
	Sig.	.000

The most important assumption to conducting EFA for extracting underlying factors solutions is there must be existence of correlation greater than .30 between the variables (Hair et al., 2009). The results of the present study found that all the variable have correlation greater than 0.30. Factor analysis was further conducted to identify the items having factor loading of less than .05 or cross loadings (Hair et al., 2009; Mahlotra, 2010). Varimax factor rotation was applied to minimise the complexities of factors by maximizing variance of factor loadings on each observed factors and for better the interpretability of the factor loadings on each factor (Tabachnick & Fidell, 2007). The result showed six factors exhibited eigenvalue greater than 1. These six factors captured 66.66 percent of the total variance as shown in table 3.

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Table 2. Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.112	34.725	34.725	11.112	34.725	34.725	6.124	19.137	19.137
2	3.059	9.559	44.284	3.059	9.559	44.284	3.105	9.702	28.839
3	1.793	5.604	49.888	1.793	5.604	49.888	2.901	9.065	37.903
4	1.327	4.147	54.035	1.327	4.147	54.035	2.738	8.557	46.460
5	1.236	3.864	57.899	1.236	3.864	57.899	2.393	7.478	53.937
6	1.047	3.271	61.170	1.047	3.271	61.170	2.314	7.232	61.170
7	.905	2.827	63.997						
8	.876	2.739	66.736						
9	.859	2.686	69.421						
10	.816	2.551	71.972						
11	.770	2.408	74.380						
12	.696	2.176	76.556						
13	.685	2.140	78.696						
14	.655	2.048	80.742						
15	.572	1.789	82.531						
16	.526	1.643	84.174						
17	.499	1.559	85.733						
18	.458	1.431	87.164						
19	.446	1.393	88.557						
20	.425	1.329	89.886						
21	.398	1.243	91.129						
22	.387	1.210	92.340						
23	.348	1.086	93.426						
24	.331	1.034	94.460						
25	.291	.909	95.369						
26	.274	.856	96.225						
27	.267	.834	97.059						
28	.257	.802	97.861						
29	.220	.686	98.548						
30	.183	.571	99.118						
31	.153	.479	99.598						
32	.129	.402	100.000						

Extraction Method: Principal Component Analysis.

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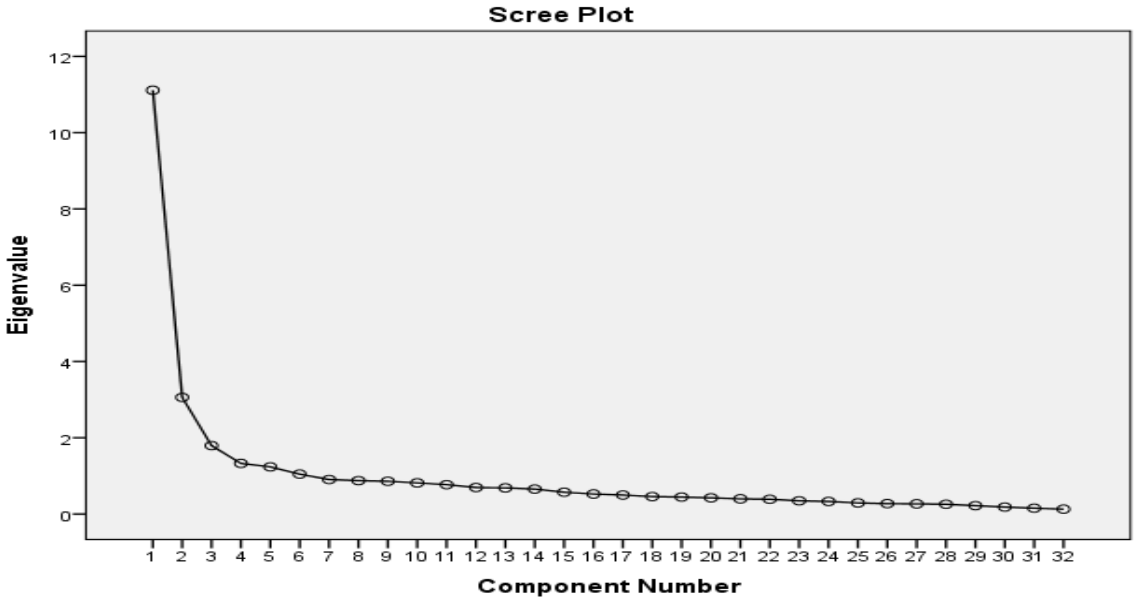
An analysis of graphical scree plot as illustrated in figure 2 below also revealed that six main factors could be extracted. These six factors are located at the vertical position of the graphical scree plot.

Figure 2. Scree plot



Environmental concerns and regulatory compliance

The first factor emerged is 'environmental pressure and regulatory compliance' comprised of ten items with the factor loading ranging from .550 to .814 and accounted 19.137% of the total variance. The items in this factor are related to regulatory guidelines framework and pressure from various outside groups i.e NGOs, environmental groups etc to adopt green practices. Various authors in the past have stressed on the significance of these pressure group and guidelines to

adopt green practices (Sudhalakshmi & Chinnadorai, 2014; Chaurasia, 2014; Biswas, 2011; Kumar, 2020).

Economic Factors

The second factor is labelled as 'economic factor' significantly contributing to the adoption of green banking practices by the banks in India. This factor comprised of three items with the factor loading ranging from .575 to .772 and accounted for 9.702% of total variance. This factor signifies that economic benefits incurred form green practices also play a crucial that influence adoption of green banking practices by the banks (Jha & Bhome, 2013; Kumar & Prakash 2019; Hoepner & Wilson, 2011).

Customer needs and benefits

The third factor is labelled as 'customer needs and benefit'. This factor comprised of four items like customer need for branchless or internet banking services, lower risk, personalisation and convenience. The factor loading ranged from .654 to .744 and total variance of 9.065%. The expectations of the customers with regard to environmentally responsible conduct of the bank and huge demand for green product and services are the important reason emerged for the adoption of green banking practices by the banks. Various studies have emphasised on the need for development and implementation of green banking practices by the bank to address rising demand of customers (Bukhari et al., 2019; Prakash et al., 2018; Sharma, 2018; David & Shameem, 2017).

Competitive advantage

The fourth factor is labelled as 'competitive advantage' involved three items with the factor loading ranging from .510 to .625. This factor accounted for 8.557% of total variance. Banks are increasing adopting green banking practices to gain competitive advantage and tap new market

opportunities. Green banking practices results in improving brand image and also increase returns in longer-run (Tara et al., 2015; Rahman et al., 2013; Julia and Kassim, 2019).

Ethical values

The fifth factor is labelled as 'ethical values'. This factor comprised of four variables with factor loading ranging from .543 to .577 and accounted for 7.478% of the total variance. Ethical values play a very crucial role in promoting environmentally friendly practices and sustainable development (Hoepner et al., 2010; Icke et al., 2011). Chew et al., (2016) emphasised that although implementation of green banking practices is not mandatory in India but majority of large banks are adopting these practices on voluntary basis due to the ethical code of conduct formulated by the banks.

Legal Factors

The sixth factor is legal factor comprised of two items with the factor loading of .675 and .727. It represents 7.232% of the total variance. Various studies highlighted regulatory pressures as one of the most important driver for adoption of green banking practices. Environment risk management while financing helps to ward off the clients legal problem regarding environmental laws (Islam & Das, 2013; Shamshad et al., 2018; Bihari, 2010). Adoption of green banking practices has witnessed surge in India due to the RBI 2007 directives for the banks to contribute towards sustainable development and incorporate green banking into core business strategy.

Table 4. Shows factors influencing adoption of green banking practices by the banks and their related attributes

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Factors and their related attributes	Factor loadings	Factor Labelling (% of variance explained)
To promote adoption of eco-friendly and energy efficient technology	.814	*Environmental concerns and regulatory compliance (19.137%)*
To reduce the carbon footprints	.776	
Pressure from environmental groups and civil society	.758	
To protect environment	.723	
To promote sustainable banking	.701	
Formulate environment risk management framework	.671	
To comply with national and international guidelines like GRI,NVGs	.592	
To address social development issues	.580	
Pressure from customers	.575	
To address global warming and climate change issues	.550	
Paperless banking &recycle re-use reduce transaction cost	.772	*Economic Factors (9.702%)*
Lower credit risk to green banking products	.663	
Transaction cost of the account is low	.575	
To promote online banking	.744	*Customer needs and product benefits (9.065%)*
Lower credit risk	.717	
Convenience to use and personalisation for customers	.666	
High demand for green product and services	.654	
To tap new market opportunities	.625	*Competitive advantage (8.557%)*
To improve brand image	.623	
To achieve commercial excellence	.510	
It help to solve environmental problems	.577	*Ethical values (7.478%)*
To promote green innovation	.562	
To address social development issues	.558	
To incorporate Sustainable development issues	.543	
To address RBI directives to promote sustainable development	.727	*Legal Factors (7.232%)*
To avoid client relate legal problems	.657	

Conclusion

Commercial banks in India are increasingly adopting green banking practices to promote environmentally friendly practices. The results of the study found that six factors largely influence the adoption of green banking practices by commercial banks in India. These factors are; environmental concerns and regulatory compliance, economic factors, customer needs and benefits, competitive advantage, ethical values and legal factor. Environmental concerns and regulatory compliance emerged as the most important factor that influence adoption of green banking by the commercial banks in India. Green banking helps to reduce carbon footprints and in general addresses most of the dimensions of sustainability. However, it was also found that there is absence of uniform green banking policy. This study is one of the first efforts on assessing adoption of green banking practices by the banks in India. The findings provide significant insights into the factors that influence adoption of green banking practices by the banks in India. This study also contributes to extant dearth of literature on green banking in Indian context. This will further bolster the adoption of green banking in Indian banking sector. The identification of factors influencing adoption of green banking practices will be helpful for the banks, regulators and policy makers to promote the development and implementation of green banking practices in India. The implication of these finding suggest that regulators and policymaker need to formulate uniform green banking policy in Indian banking sector.

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Mobile financial services: Behavioral intention adoption (A Meta analysis approach)

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Abstract:

Design: The design and methodology followed in this research paper have been kept very elementary. This research paper is an attempt to understand the mobile financial services adoption in context to other variables like perceived use (PU), perceived ease of use (PEOU), trust, social influence, perceived risk, attitude, compatibility. The above 7 bivariate relationships have been studied in a comprehensive way by applying the fundamentals of meta analysis. **Purpose**: The purpose of the research paper is to identify the global trends in the adoption of mobile financial services in the seven bivariate relationships, and whether significant differences exist across continents.

Findings: There has been a lot off research which has been done on mobile financial services adoption, but all the researches have been confined to a particular geography. There are some research papers written on TAM meta analysis, but this is for the first time when a niche research involving meta analysis on the most important bivariate relationships have been done on

behavioral intention of mobile financial services adoption in an international context. There is clear need to identify global customer engagement factors affecting mobile banking adoption, with a crystal factor to identify subgroups affecting the variations in a planetary framework. The meta analysis approach has conveyed a very important point that location is a very important parameter involved in the adoption of mobile financial services. In the sub group analysis, it clearly reflects that location has been the major factor of heterogeneity in the seven bivariate relationships.

Research implications/ Practical implications: The findings and research implications of the paper is having profound managerial implications globally, that strategists need to have location as a predominant factor in their mind while framing strategies for their organization.

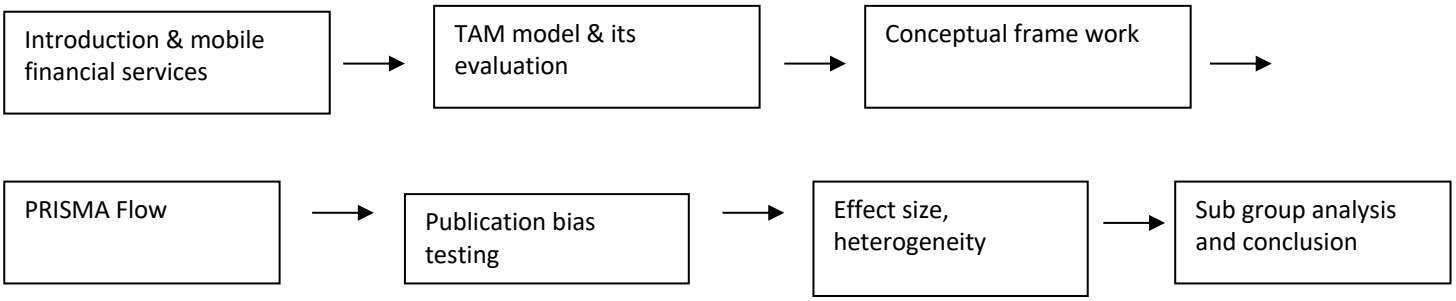
Social link : The vital social link which the current research encapsulates is that location constraint is linked in a vital manner to other social factors like religion, education level, family size, buying habits and wealth which needs to be further explored for understanding the behavioral intention adoption of mobile financial services.

Orignality value : This is one of the first niche studies done involving meta analysis to identify factors affecting mobile banking in a global context along with subgroups responsible for variations in a global scenario.

Research Design

The behavioural intention to adopt mobile financial services is varying across the globe , and there is a dire need to study the mobile financial services adoption with regards to PU, PEOU, trust, social influence, perceived risk, attitude and compatibility. The main problem is to identify the variable factor responsible for this haphazardness. In order to identify the sloppiness we have

assembled over ten thousand research paper from popular databases by applying appropriate keywords. Post screening the research papers, we have shortlisted only thirty plus papers for analyzing the research problem. After doing the literature review we have framed seven hypothesis of the seven bivariate relationships. To identify the variable factor, we have applied the fundamentals of meta analysis , in which we study publication bias, effect size , heterogeneity and sub group analysis. Basis the statistical results, we test the seven hypothesis. Post that , we do the discussions and finally conclude the research findings.



1 Introduction:

The banking industry is on the verge of a dynamic change, and things are changing very rapidly across countries. The banking industry has shown tremendous growth in the last many years, consequently the outreach of the banking sector varies across countries (Beck , & Peria , 2007). The financial access initiative of the New York university has written that there are 2.5 billion people in the world who do not have access to regulated banking practices (i.e. they neither have a savings account nor do they have any credit facilities (Chaia et al., 2009). Mobile commerce or M commerce refers to the business conducted through wireless network.

The advantages of mobile commerce over internet banking are enormous because of itsuniversal, exclusive and particular approach. The advent of new technologies like the internet of things, artificial intelligence, has made mobile commerce a very promising field. Many researchers have made sincere efforts to work across mobile commerce domains , like mobile financial services (Hsu, & Wang, 2011) ; (Kleijnen ,& Ruyters, 2003) , mobile banking (Kleijnen etal., 2003) , transactions on mobile banking (Khalifa, &Shen, 2008) , and universal mobile commerce. The large cost of maintaining bank branches in the metro, urban and rural areas have open gateways for mobile banking enabled with advance technology to penetrate deeper in the developing countries. The mobile banking has the capability of bringing in its mainstream a set of customers who could have been served at a very high cost only .The actual adoption of mobile banking is very slow in the beginning, and tends to differ across geographies (Mallat et al., 2004).

The above facts make it very interesting to understand customer engagement and the factors influencing the behavioral intentions relating to mobile banking.The Covid -19 pandemic has proved beneficial to the entire global community in pushing digital usage to the last mile.
A major issue of mobile information system is to identify and acknowledge factors which make people behavior to adopt these technologies. In the last many decades a lot of theories have come forward to address the problem. In 1971, king and Cleland proposed the “team work “ model to distinguish and savvy the users inhibition in understanding the information systems developed for them. Schultz and Slevin has rightly proposed that a distinction has to be made between technical and organizational factors to understand that the information systems which have correctly met all technical standards are not globally accepted by the users. In continuation of their efforts , in 1989 Davis proposed the technological acceptance model (TAM) to understand the common user’s behavioral intention to understand and use a technological innovation (Davis, 1989).

TAM is based on the theory of reasoned action (TRA) , a prominent psychological theory that justifies behavior . TAM involved two primary prognosticators – perceived ease of use (PEOU) and perceived usefulness (PU) and the subordinate variable is behavioral intention which TRA has proclaimed to be directly linked with behavioral intention. TAM has been the most prominent models used in information systems because of its ingenuousness (Davis, 1989). There is a need to study the 2 primary variables i.e. PU and PEOU and behavioral intention across studies . Bagozzi, 2007 has identified major gaps in the TAM model , which we discuss in detail in the subsequent section. TAM is unable to explain the behavior-intention gap , and there has been a negligence of the social – cultural factors. Hence there is a need for a meta analytic approach in detail for the study of the aforementioned variables in mobile financial services.

The idea to bring " mobile banking " and " mobile payments " under the umbrella of "mobile financial services " wherein an effort is made to understand the definitions of the mobile aspects and the factors affecting the same. In section 1(introduction) , we will study in detail the concept of " mobile financial services " . In section 2 , we will understand the concept of TAM and the customer engagement factors relating to the behavioral intentions in mobile financial services. In sections 3 we will study the detailed meta analysis of the above factors . In section 4 , we will do the discussion of the findings and will conclude alongwith implications of future research.

Mobile Financial Services (MOFISS) :

The term mobile financial services deals with a broad spectrum of activities which consumers engage upon while doing mobile surfing. MOFISS can be divided into 2 broad subgroups : mobile banking and mobile payments. Mobile banking is an extremely important new channel which has been emerging in a prominent way for the present day customers , giving them an opportunity to communicate with their banks through mobile phones and personal digital assistants (Barnes,&

Corbitt, 2003). Mobile banking can be described as a confluence of banking and technology (Chung, & Kwon , 2009) ; in broader terms a main subset of digital banking allowing easy access to banking services by all customers (Yu, & Fang , 2009) . Mobile payments can be described as a process of transfer of payments from the payer to the receiver either through an intermediary or directly (Mallat , 2006).

The term mobile banking and mobile payments are very closely interconnected , as some mobile banking platforms allows the customer to do transfers of money along with other banking services , whereas some m-payments products are so well linked to the bank accounts as the source of funds that they silently assume the functions of m-banking. Mobile payments wallets are equivalent of wallets and are being used conveniently to make payments to merchants and receivers (Bagla, & Sancheti , 2018). These transactions can happen through different channels like customer to customer , customer to point of sale machines , customer to online , and customer to business (Shin, 2009). The percentage share of digital payments by credit cards / debit cards have declined by almost 50% of the total digital payments in the 12 months period till January 2019 , whereas mobile payments graph has been steadily climbing and has risen by 27.9% compared to 3.5 % , in almost 4 years time (Bloombergquint, 2019) . India has been one of the most promising growing markets for mobile wallets adoption , and according to *Statista* the share has grown rapidly from 2% in 2013 to 11% in 2016 ; volume of business is expected to go up from INR 1.7 trillion in 2018 to INR 2 trillion in 2019.

The important factors which have led to the high growth of mobile wallets are : government pushes for cashless economy , the sharp increase in smart phone usage , new product launches of mobile payment wallets by technology companies and banks , and QR code payment is driving the

steep increase in m – payments adoption.It is envisaged that volume of mobile payments business in India will also grow at 52% CAGR from the year (2019 – 2023).

Mobile banking , is redefining the competitive advantage in banking arena wherein the customers patriotism is declining . It also strengthens customer acquisition through reduced costs by offering value added services. Mobile banking offers omni channel access , in contrast to other channels. The access of mobile systems is through three nodes viz : SMS (short messaging service) , browser based systems (WAP) , and applications. Some researchers further states that SMS and browser are the most common platforms used. However big 4 consulting firm Ernst & Young, further states that downloadable applications is the most common access points in mobile banking , wherein 15000 applications are daily downloadable in the UK per day.

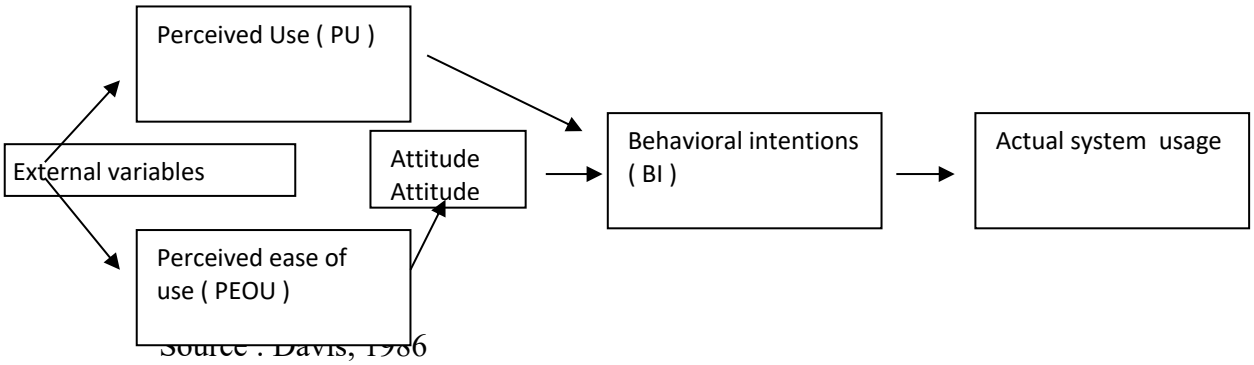
Adoption rates of mobile banking differ across countries, wherein the approbation is high in developing countries (60% - 70 %) , as compared to developed countries . (Barnes, &Corbitt, 2003) analyzed that existing business distribution framework , market conditions and consumer behavioral intentions are important factors towards studying mobile banking framework. We can also conclude a very vital point that m-commerce is following a different path than e-commerce. (Sundqvist et al., 2005) also embarked an important point that countries wealth , trade , cultural factors , cosmopolitan, mobility are other factors which affects MOFISS adoption.

2 Technology acceptance model (TAM) & other customer engagement factors :

“ Productivity Paradox “ signaling under utilization of information systems by the employees , means low returns to the organization with regards to investment in technology is an important factor for study in management science. Understanding and creating situations which results in humans accepting the novice technology is an important area to be researched .(Davis , 1989) has

stated that significant support has been made for the technological acceptance model . Prominent researchers also acknowledges that TAM is much better that TRA (Theory of reasoned action) and TPB (Theory of planned behavior). TAM states that an individual behavioral intention to use a system depends upon two things i.e. Perceived use (PU) in which an individual feels that the use of a particular system will increase the job performance ; and Perceived ease of use (PEOU) emphasizes the extent to which an individual feels that using the new system will be free of effort. PU is also swayed by PEOU , as more user friendly a system is ,the better it is.

TAM basic model :



Source : Davis, 1986

The basic TAM model did provide a lot of insights to the organizations on the failure /success of information systems. As discussed above , there were other factors like social influence, cosmopolitan , the channel distribution , trade and wealth which are affecting the intention to adopt new systems.

The major shortcomings of TAM are as follows (Bagozzi, 2007) :

- There are 2 discerning gaps in TAM : The first is the intention – behavior gap , and the second gaps exits between individual responses to using information and intention gap.

- Another major shortcoming of TAM is that there are no major sound variables which determine PU & PEOU in judgment making.
- There is a complete neglect of group, social and cultural factors.
- The reliance on original and very clear notions of affects and emotions.
- The total reliance on a pure regulated frame work, with no consideration of self regulated processes.

But inspite of its success the basic TAM model has been criticized for its simplicity (Bagozzi , & Warshaw , 1989). Several other management researchers have suggested for modifications in the variables suggested in TAM (Agarwal ,and Prasad , 1998) ;(Chau ,1996). TAM is a very useful model to explain the usage of technology in a workforce or a company . TAM has also received criticism that it lacks variables in explaining the complete adoption of mobile banking payments . TAM is too frugal in explaining the adoption of technology in a particular framework, and has to be clubbed with additional factors pertaining to a particular technology framework. Basis the above arguments, we conclude that there is a need to build a further model which explains the adoption of mobile financial services.

Venkatesh & Davis et al., have proposed the TAM 2 model in order to overcome the shortcomings of the basic TAM model. TAM 2 , was built on the lines of TAM with inclusion of social influence processes , experimental and intellective processes.

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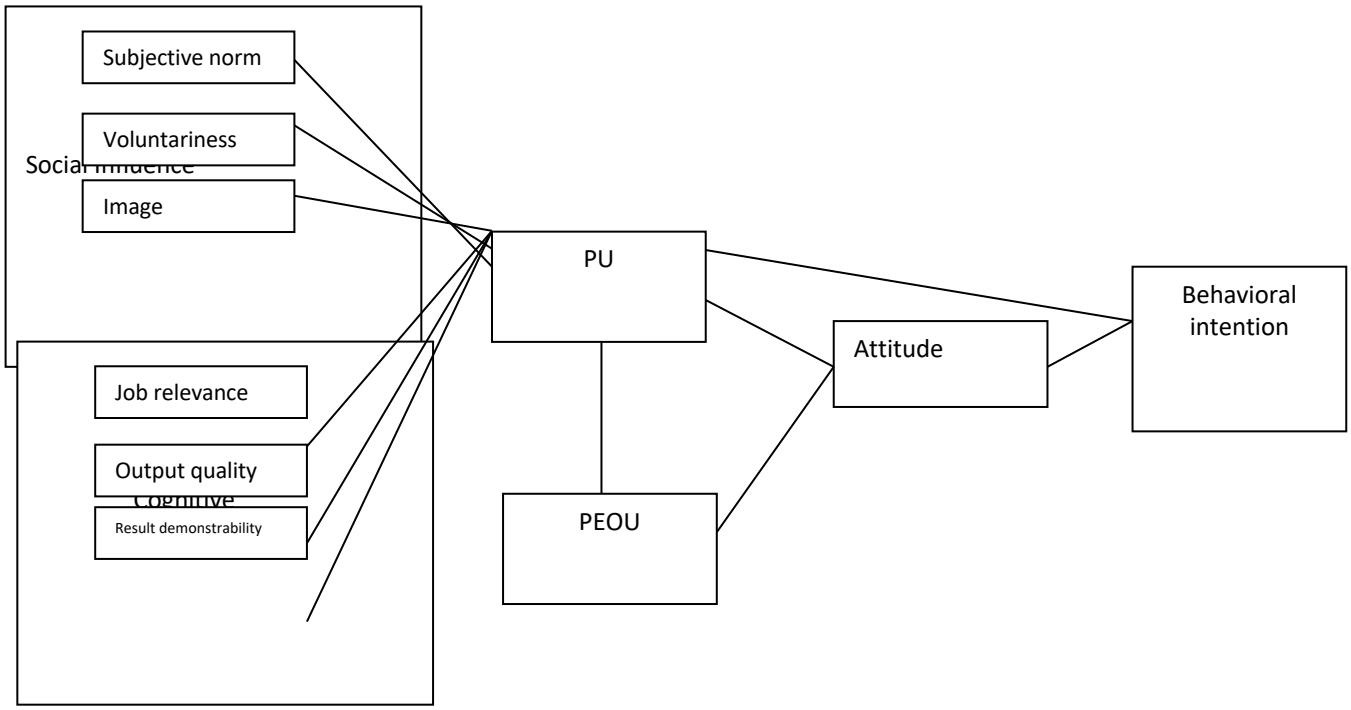

TAM 2

The main criticism of TAM 2 , model was the inadequacy of the model to explain the factors which are affecting perceived ease of use. So in order to overcome the shortcomings of the TAM 2 model , Venkatesh et al., has come up with a TAM 3 model. TAM 3 model has made huge contributions to the TAM theory by recognizing the factors influencing TAM model by incorporating the elements of context, content, process and individual differences (Venkatesh et al., 2008).The meta analysis of the shortlisted 30 papers has enabled us to identify the variables which have consistently appeared in the shortlisted papers: trust , perceived risk , social influence , attitude & compatibility. We will study the below variables in detail :

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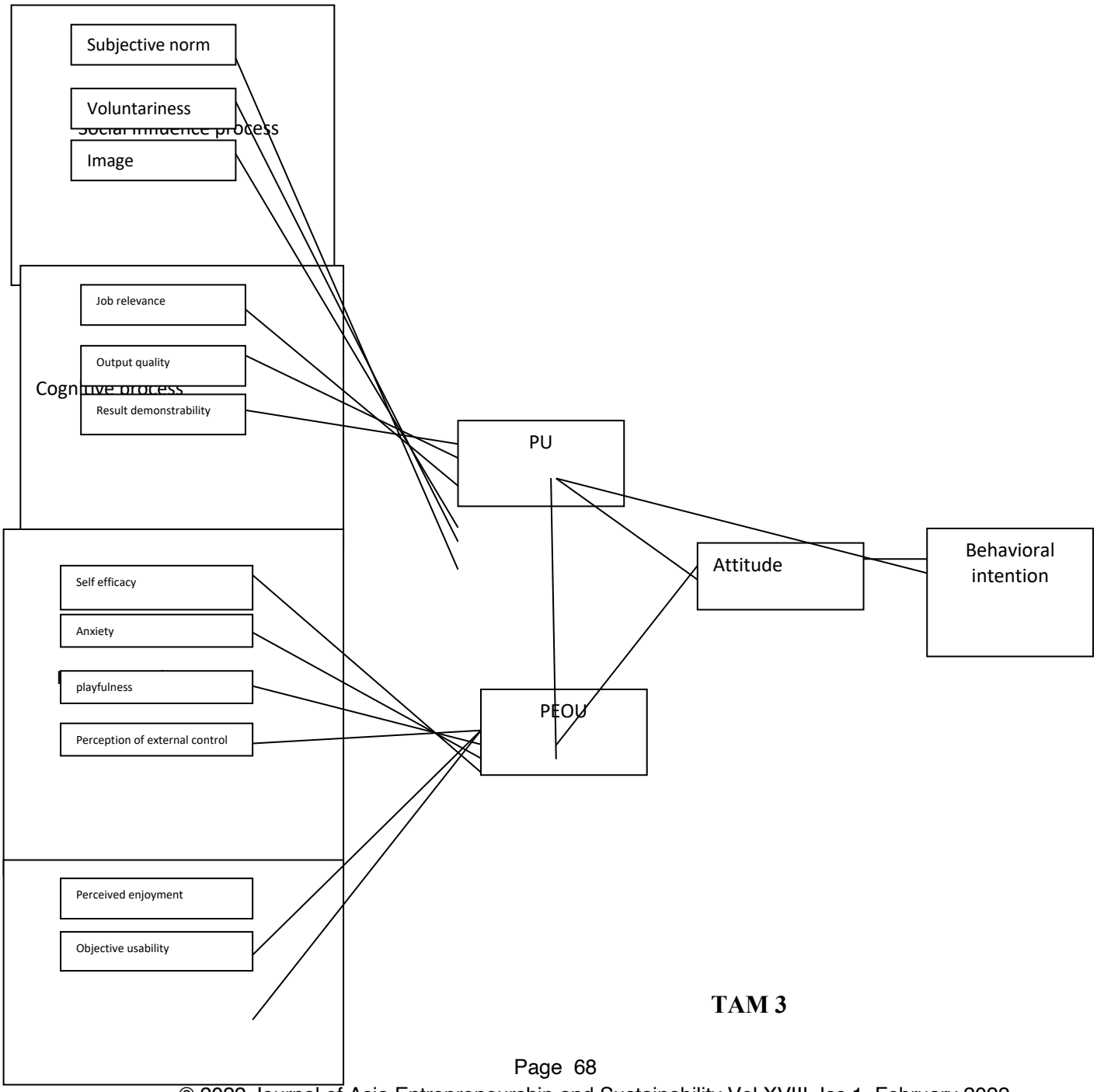

TAM 3

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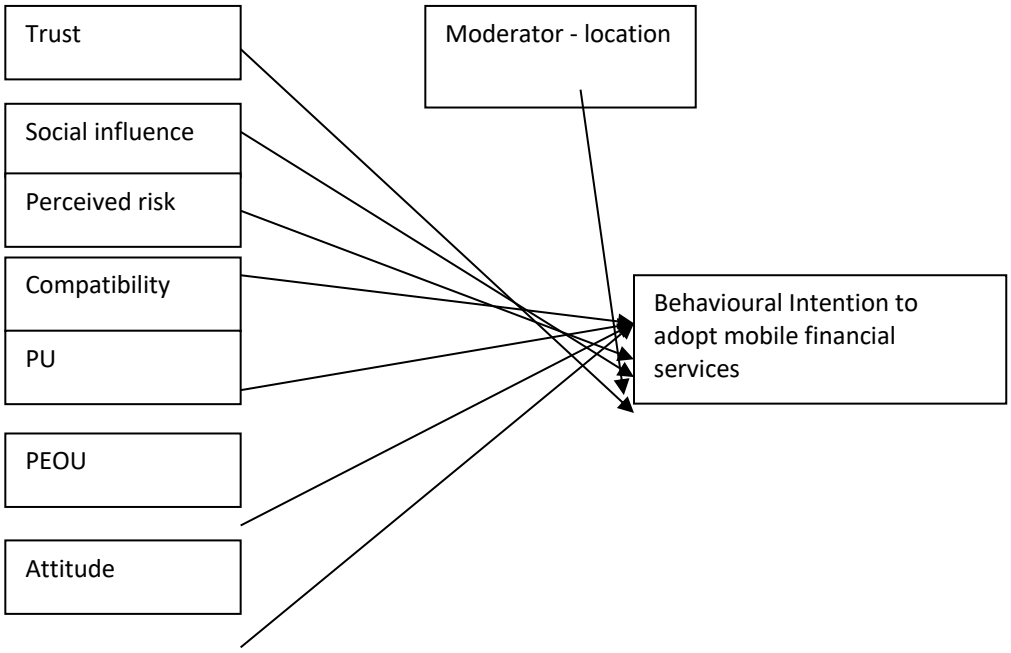
Conceptual framework

Basis the above discussions , we conclude that TAM has been a very robust model , but there has been some shortcomings in the basic TAM model model proposed by Davis in 1989. TAM 2 has been a extended version of TAM with experiential factors being introduced as affecting PU & PEOU.The conceptual framework which we propose is that all the seven bivariate relationship being studied are affecting the behavioural intention to adopt mobile banking individually , along with location as a moderator (predominantly explaining the reason of variation across geographies).



Perceived Use (PU)

Perceived usefulness as per TAM is defined as the order to which an employee/ individual, strengthens his performance by using a particular technology (Gahtani , 2001; Davis, 1993 ; Mathwick etal., 2001; Curran,& Meuter, 2005).The high usefulness is directly related to adopting new technology. PU in line with TAM , is the angle to which an individual improves his job performance by using a particular technology (Gahtani, 2001; Davis , 1993; Mathwick etal., 2001; Davis, 1989). PU is a very vital signifier of attitude , and it plays a key role in shaping utilization of new technologies (chen etal., 2014; Kapoor etal., 2014).Customers tend to compare the earlier method to make payment , and the current method to evaluate the convenience of both the methods, and are certain to adopt the method which is more useful. Basis , the above justification system functions can b e used to assess the PU of mobile payment (Kim etal., 2010). PU is defined as the subjective judgment that the use of a particular system (example : mobile wallet) will enhance his/her actions. (Pham, & Ho, 2015)) noted that PU is the foremost characteristic of a new technology to be taken into account . Previous research has also suggested that PU have a direct positive correlation with attitude and intention to use. Many other researchers also holds similar view that TAM also states that a user intention to adopt and use mobile payment also depends upon perceived usefulness. PU is the end user perception that using a particular technology will functionally benefit the user in finishing the assigned task (Curran, & Meuter , 2005). Perceived usefulness has been regarded as a variable which is positively mobile banking adoption (Hanafizadeh etal., 2014). In Germany as well , PU has contributed positively towards young customers adopting mobile banking (Lewis etal. , 2010). On the basis of the above arguments , we frame the below mentioned hypothesis :

H1 : Perceived usefulness positively affects mobile banking intention adoption.

Perceived ease of use (PEOU)

The greater the ease of use of system , the greater the adoption of technology (Nguyen, & Cassidy, 2018) . Contrary , if the ease of use of technology is low , the greater will be the impediment for technology adoption. Great bonding between PU and PEOU suggests that technology usefulness and ease of use will result in greater adoption of mobile banking (Shaikh, &Karjaluoto , 2015; GU etal., 2009). The simplest way to define PEOU, is that it refers to the individual's information of using a particular system ; is not forced upon them and is user friendly (Davis etal., 1989). (Venkatesh etal., 2000) defines it as the evolution of the endeavor which takes place in the process of using a technology .(Davis , 1989) refers PEOU as the degree to which a new technology will be struggle free . PEOU is the most important antecedent in the adoption of mobile payments .Chinese customers are more inclined towards convenience, hence mobile payment was a more rewarding experience used by them vis-à-vis credit cards. Self sustaining technologies (SST) research also recommends that easy to use technologies are more likely to be adopted than the technologies that difficult to use. PEOU of technology is an important catalyst and forecaster of mobile banking adoption . (Pusch etal., 2010) has suggested that an increase PEOU will lead to higher adoption of mobile banking. On the basis of the above arguments , we develop the below mentioned hypothesis :

H 2 : Perceived ease of use positively affects mobile banking intention adoption.

Trust

Trust can be divided into 2 parts : fundamental and advancing (Gefen et al., 2003) ; fundamental trust is defined as customers initial belief and credit of the other party (Kim etal., 2009) , advancing trust signifies the establishment of fundamental trust besides the inducement of perceived risk.Mcknight and Kim in their study further elaborates that the 2 dimensions of trust i.e. fundamental and progressing are the most important branches of trust for reinforcing credence

along with the endurance of perceived risk in customer's mind. (Kim etal., 2009) in their study of mobile banking also concluded that the formation of introductory trust is very important in the adoption of mobile banking.

Trust refers to the situation that providers of service are not self centered, and would behave in a good way with their partners (Pavlou, 2003). In contrast to brick and mortar model , the online users are more concerned with regards to the security of their data and personal information .Therefore , Trust is an important phenomenon , which makes users embrace new technology .Trust is an important variable that influences consumer's perception, preference of mobile wallets and mobile banking adoption in India. The user friendly interface of mobile wallets, helps users to understand trust. The above arguments enable us to form the below mentioned hypothesis :
H 3 : Trust has a positive effect on mobile banking intention adoption.

Social Influence

Bashir,& Madhavaiah, 2014 have encapsulated that social influence positively magnetizes the adoption of internet banking . Deb, and David , 2014 has also referred that the relationship between social influence and the attitude to adopt mobile banking to be positively correlated. Social influence can be defined as the angle to which a user thinks , that other people viewpoints are important in adopting a technology innovation (Chong etal., 2010). Research has time and again reinforced the concept that social influence has played a pivotal role in predicting mobile banking adoption.

As consumers gets influenced by each other , they tend to think that the consumption of the product is public; consequently influencing each other to adopt the product.Social influence has

contributed positively in China towards the adoption-intention of 3 G services. Basis above arguments , we hypothesize as below :

H4 : Social influence positively influences mobile banking intention adoption.

Perceived Risk

Perceived risk is defined as manifestations of vague consequences regarding consumer activities which carries with it a probability of suffering a loss in achieving a particular goal (Wessels , & Drennan,2010 ; Pavlou, 2003; Mortimer etal., 2015).Perceived risk can be described as the formation of obscure activities which convoy the risk of suffering a loss in attaining a particular ambition ; as people think that the adoption of mobile banking will expose them to a higher risk. (Pavlou, 2003) further states that perceived risk is the consumer's perception of suffering a loss in the context of achieving a particular goal. Research also defines that highly expressive technologies having personal touch like mobile banking carries with it, a higher perception risk . Since mobile banking is a deflecting and portable technology , the levels of risk are definitely higher. Basis the above arguments , we frame the below hypothesis :

H 5 : Perceived risk is negatively influencing mobile banking intention adoption.

Attitude :

Attitude plays a key role towards the adoption of a new technology (Davis , 1989). (Pusch etal., 2010) in their mobile banking research states that attitude positively affects mobile banking adoption and continuity intention. It is considered a 3 dimensional of developmental , emotional/intellectual and perceptual factors . The developmental component implies intention to buy and refer , intellectual attitude refers to an individual opinion about a product or service and perceptual attitude refers to the feelings of evaluation about a product or service (De Luna etal.,

2018). The impact factor of PEOU has a strong and profound effect on the attitude to adopt mobile banking and wallets.

The above arguments help us to frame the below mentioned hypothesis :

H 6 : Attitude positively affects mobile banking intention adoption.

Compatibility

Modernization appropriateness to the life approach and the needs of the people is called as compatibility (Hernandez,& Mazzon , 2007) ; high modernization compatibility leads to bigger chances of wide adoption (Wessels ,& Drennan, 2010) as it creates more harmony between life style and needs. Compatibility is defined as a momentousness of a particular technology that is in tune with present and past experiences of the users. Compatibility is a highly significant variable that has a positive impact on PU and PEOU along with the intention to adopt mobile banking.

In simple words , it is defined as the angle to which mobile banking is aligned to the life style, likings and beliefs of a particular community. Consumers who viewed mobile technology innovation in sync with their life styles are likely to adopt it (Puschel etal. , 2010). Compatibility was found to positively influence the adoption of mobile banking in Brazil (Pusch etal. , 2010).

The above discussions lead us to frame the below hypothesis :

H 7 : Compatibility positively influences mobile banking intention adoption.

Meta analysis

3.1 Data Collection

A comprehensive search is done of research papers across databases and after applying the exclusion criteria have shortlisted 34 papers. The prominent databases are scrolled along with journals like Scopus data base , Emerald , EBSCO , Wiley and JSTOR. A comprehensive search is performed on all the databases as per the following combination of words : " customer

engagement and mobile banking" , " customer engagement &mobile wallet adoption" , " mobile banking" , " mobile wallet", " augmented reality and mobile banking" , " customer engagement and online banking" , " customer engagement and online shopping" , " customer engagement and internet banking ", " customer engagement and banking" , " consumer behavior and banking" , " TAM and mobile banking adoption", "TAM and mobile wallets", " consumer attitude and mobile banking", " behavioral intention and mobile banking".

Inclusion criteria : A total of 9641 records were identified for meta analysis. Duplicate studies were removed which left us with 6836 records, the screening of titles of the research paper has further excluded 5975 records. Now only 851 unique records were left for full text screening. Inordinately 213 studies were there for qualitative research, which enabled us to identify 34 unique research papers for meta analysis.

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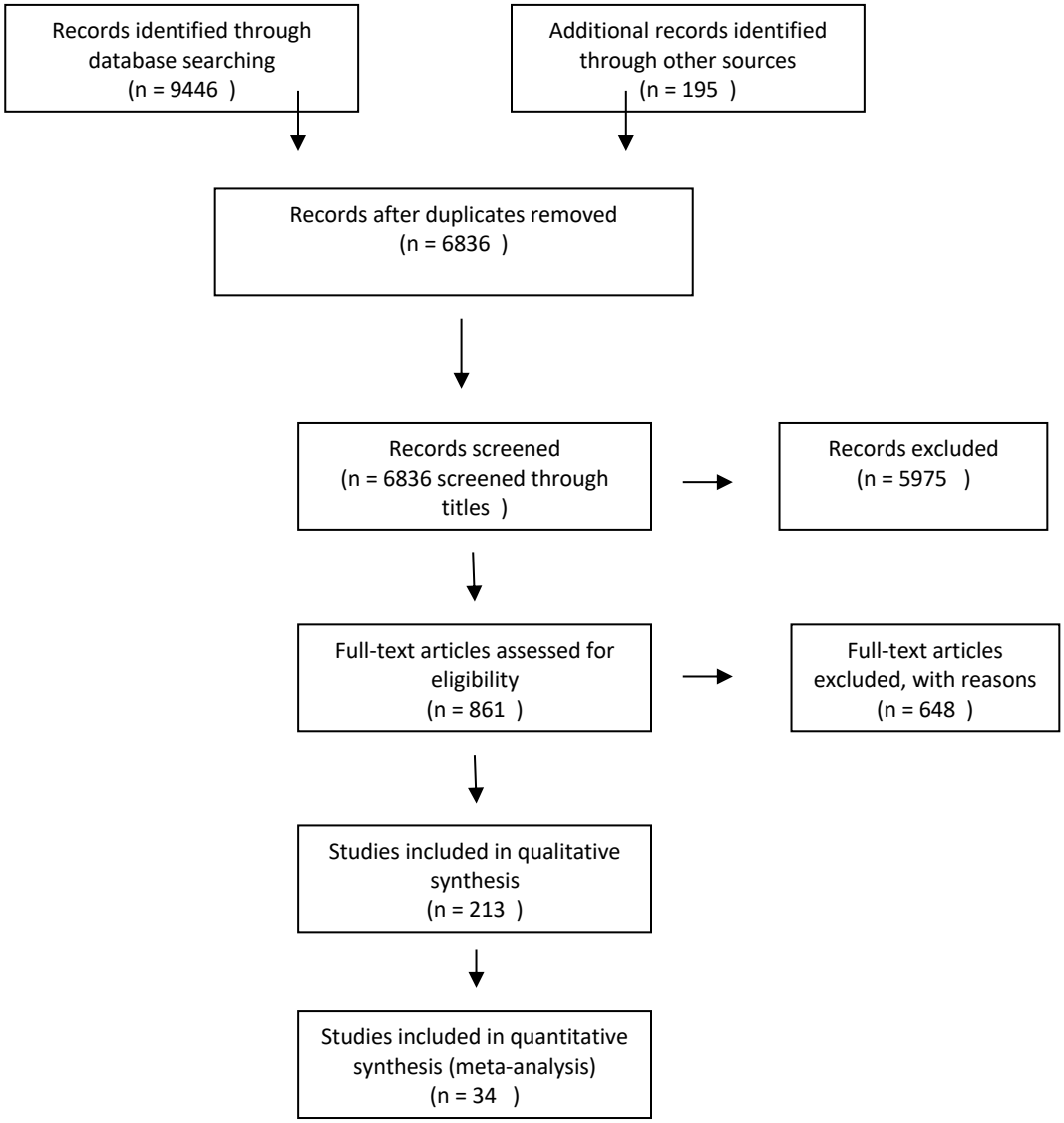
PRISMA Flow :



3.2 Statistical Analysis

As a part of the statistical analysis, the aim is to study the factors affecting behavioural intention to adopt mobile banking in a global context. Therefore there is a dire need to understand the composition of the population along with the reasons of variations (whether there are variations or not across geographies). To understand the same we will use meta analysis statistical technique. We will first perform the publication bias test for the shortlisted 32 papers followed by homogeneity/ heterogeneity test followed by subgroup analysis (Rhee, &Hak, 2017). We will study the correlation values between the seven bivariate relationships , along with the number of participants in the study in meta essentials software for analyzing the results.

3.2.1 Publication bias analysis

To test the 7 bivariate relationships for publication bias , we will use the Galbraith plot to test for publication bias in the shortlisted set of studies . The central concept of Galbraith plot is to run an unweighted regression of z scores on the inverse of the standard error with the intercept constrained to zero (Rhee, &Hak, 2017). The plot can be used for aberration in the effect sizes. The basic assumption is that 95% of the studies are within the area defined by the 2 confidence interval lines. We will use meta essential software which gives a table with studies , a graph and a table with regression estimates. “Effect size” is a simple way of quantifying the relationships between two groups and is extensively used for meta analysis in management research and social sciences. The Galbraith plot of the 7 bivariate relationships clearly reveals that there is no publication bias. (Refer Annexure 1).

3.2.2 The Effect Size

The effect size measures the magnitude of relationship between 2 variables (Borenstein et al. , 2007). There are two type of effect sizes which exist namely fixed effect and random effect size ,

fixed effect assumes that only single effect exist across populations from which samples are drawn whereas random effects signifies that varying effects exists across populations through which samples are drawn. The forest plot is an important way of analyzing the effect sizes of a particular bivariate relationship being studied. According to (Cohen et al. , 1983) , the effect size can be categorized into strong (0.5), moderate (0.3) or weak (0.1) based on its magnitude. In case of a 95% confidence interval if the p-value is less than 0.05, it clearly illustrates that the bivariate relationship being studied is statistically significant and strong.

Covariates	Combined effect size									Heterogeneity				
	Corr	CLL	CUL	PLL	PLL	No.incl. studies	Z-value	1 T - p-value	2 T p-value	Q	pQ	I2	T2 (z)	T (z)
PU to BI	0.55	0.49	0.61	0.09	0.82	32	14.03	0.00	0.00	738.6	0.00	95.80%	0.07	0.26
PEOU to BI	0.49	0.43	0.55	0.10	0.75	32	13.41	0.00	0.00	507.1	0.00	93.89%	0.05	0.21
Trust to BI	0.66	0.53	0.75	0.33	0.84	7	9.89	0.00	0.00	65.94	0.00	90.90%	0.03	0.16
Social influence to BI	0.35	0.22	0.46	-0.09	0.67	10	5.88	0.00	0.00	81.10	0.00	88.90%	0.04	0.19
Perceived risk to BI	0.01	-0.39	0.41	-0.89	0.89	11	0.06	0.47	0.95	1043.9	0.00	99.04%	0.37	0.61
Attitude to BI	0.68	0.59	0.76	0.18	0.90	14	11.46	0.00	0.00	482.6	0.00	97.31%	0.09	0.29
Compatibility to BI	0.67	0.57	0.75	0.37	0.84	9	11.61	0.00	0.00	97.33	0.00	91.78%	0.03	0.17

Corr	CLL	CUL	PLL	PLL	1 T - p-value	2 T p-value	No.incl. studies
Correlation	Confidence interval LL	Confidence interval UL	Prediction interval LL	Prediction interval UL	One-tailed p-value	Two-tailed p-value	Number of incl. studies

Table 1

As is clear from the above statistics , all the six bivariate relationships viz. PU to BI , PEOU to BI , trust to BI , social influence to BI , attitude to BI , compatibility to BI , have a p-value of less than 0.05 which clearly signifies that all the six variables are having a significant impact on behavioral intentions of mobile adoption . Only one bivariate relationship i.e. perceived risk to behavioral intention is having p value greater than 0.05 , stating that the variable is not having any profound impact on behavioral intentions.

H1 : Perceived usefulness positively affects mobile banking intention adoption. (True as p value < 0.05)

H 2 : Perceived ease of use positively affects mobile banking intention adoption.(True as p value < 0.05)

H 3 : Trust has a positive effect on mobile banking intention adoption.(True as p value < 0.05)

H4 : Social influence positively influences mobile banking intention adoption. (True as p value < 0.05)

H5 : Perceived risk is negatively influencing mobile banking intention adoption.(True as p value > 0.05, clearly indicating that perceived risk is not having any profound impact on mobile banking intention adoption).

H 6 : Attitude positively influences mobile banking intention adoption. (True as p value < 0.05)

H7 : Compatibility positively affects mobile banking intention adoption. (True as p value < 0.05)

As per the above meta analysis , all the six hypothesis stated above holds True and the six bivariate relationships namely perceived usefulness (PU) , perceived ease of use (PEOU), trust , social influence , compatibility and attitude positively and significantly affects behavioral intention to adopt mobile banking.

H 5 : Perceived risk is negatively influencing mobile banking adoption is also true as the p value has been more than 0.05 , and it clearly signifies across populations in mobile banking that perceived risk as an attribute is not having significant impact on mobile banking adoption.

Homogeneity of a sample refers to a material or image that is uniform in character and image with regards to color, race, income, height, texture, language, location, country , disease , temperature and belief whereas heterogeneity refers to the samples which are distinctly non- uniform in the above characteristics. In the above study , the value of I2 is more than 75% , and clearly reflects heterogeneity in all the seven bivariate relationships. To determine the reason of heterogeneity , we will do a subgroup analysis to validate the reason of sub-group analysis(Rhee, &Hak, 2017).

3.3 Subgroup analysis

In a detailed analysis of the studies , we have identified location as a factor influencing heterogeneity and from the angle of dividing the studies into 2 subgroups , we have identified Asia (AS) as one subgroup , and have referred Europe and Africa (EUAF) as another subgroup. Borenstein has clearly stated that in subgroup analysis , the measure of heterogeneity has to be I2 .

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Bivariate relationship	sub groups	I2 (Heterogeneity)	number of studies
PU to BI	AS	0.95	32
	EUAF	0.97	
	CES	0.96	
PEOU to BI	AS	0.94	32
	EUAF	0.95	
	CES	0.94	
Trust to BI	AS	0.92	7
	EUAF		
	CES	0.91	
Social influence to BI	AS	0.9	10
	EUAF		
	CES	0.89	
Perceived risk to BI	AS	0.99	11
	EUAF	0.99	
	CES	0.99	
Attitude to BI	AS	0.97	14
	EUAF	0.98	
	CES	0.97	
compatibility to BI	AS	0.71	9
	EUAF	0.93	
	CES	0.92	

Table 2

AS – Asia, EUAF – Europe and Africa, CES – combined effect size

In the bivariate relationship PU to BI , the I2 value of CES is 0.95 attributing heterogeneity to the 2 subgroups AS (I2 -0.95) , EUAF (I2 -0.97) indicating that the heterogeneity in the studies can be attributed to location as a subgroup. In the second bivariate relationship PEOU to BI , the I2 value of CES I2 is 0.94 with heterogeneity in the subgroups (AS – 0.94, EUAF -0.95) clearly depicting the aspect that location has been an effective subgroup explaining heterogeneity in the sample studies. Trust to BI bivariate relationship also brings about important facet that location is an effective variable explaining heterogeneity with CES I2 at 0.91 and subgroup AS heterogeneity at 0.92 . The fourth bivariate relationship social influence to BI also reflects the idiosyncrasy that location is a significant explaining variable of heterogeneity with CES I2 at 0.89 and subgroup AS I2 at 0.90 . The fifth bivariate relationship perceived risk to BI particularly points out that location fully explains heterogeneity in the studied samples with CES at 0.99 and both subgroups I2 heterogeneity at 0.99. The sixth relationship being studies i.e. attitude to BI also reflects the same phenomenon that location fully explains heterogeneity in the studied samples with CES I2 at 0.97 and subgroups heterogeneity at (AS I2 – 0.97 , EUAF I2 – 0.98). The seventh bivariate relationship i.e. compatibility to BI also bring out an important facet that location is the most effective variable which can explain heterogeneity among studies with CES I2 at 0.92 ,and subgroups (AS I2 at 0.71 , EUAF I2 at 0.93).

Hence the subgroup analysis universally points out to an important facet that location is a very important parameter of study in mobile banking adoption explaining heterogeneity in the sample studies.

4A Discussion

The present study of 32 selected papers to study the behavioral intention of mobile adoption brings out some interesting and useful insights. The first hypothesis H1 that perceived use positively

effects mobile banking intention adoption holds true as is also reflected in the previous studies by (Tanikan ,& Nittay, 2019; Subhrosarkar , & Amrut , 2019; Deepak , & Himanshu, 2020). The characteristics of PU is a very important characteristic in the mobile banking intention adoption indicating that the usefulness of mobile wallet and banking application usefulness appeal is an important ingredient making users adopt their business applications. The second hypothesis H2 that PEOU positively affects BI to adopt mobile banking is also in complete sync with the previous research been conducted by (Carlos et al., 2020) , (Hossein Mohammadi , 2015). The less the effort required to adopt mobile banking application , the higher will be the rate of adoption. The hypothesis H3 that Trust positively impacts BI of mobile adoption is in tune with the earlier works inculcating that increased Trust will lead to higher rate of mobile banking intention adoption (Tanikan , & Nittaya, 2019), (Shahab , & Zahra, 2019). The hypothesis H4 that social influence positively impact BI to adopt mobile banking is an important symbol signaling the important of trust as is already been addressed by previous researchers (Lingling , & Xuesong , 2014) , (Jason , &Candy, 2017). The hypothesis H5 that perceived risk negatively impacts BI mobile adoption is continuing and redefining the research already concluded by researchers (Heikki et al., 2019). It indicates that a low risk reflects higher adoption rates. The hypothesis H6 that attitude is positively related to BI to adopt mobile banking conforms the established research already conducted by scholars (Deepak , &Himanshu, 2020) , (Giovanis et al.,2019). The hypothesis H7 states that compatibility positively affects BI also confirm the previous research , that compatibility with mobile banking applications positively affects BI , (Athapol et al.,2017). Hence this meta analysis research to our knowledge is the first one in the niche area of mobile banking describing and evaluating the various factors affecting mobile banking behavioral intention adoption.

4 B Conclusion

4B.1 Managerial implications

The present research is having sound managerial implications as it shows the global factors affecting behavioral intention to adopt mobile banking globally. It bring about an important phenomenon that location is an important variable of heterogeneity in the sample studies explaining differences in the behavioral intention to adopt mobile banking. The sub group analysis performed has earmarked an important phenomenon in the arena of mobile banking that M - Pesa , the mobile application by Vodafone has been a complete hit in Kenya , whereas the same application has not been that successful in the nearby Tanzania. Banking is undergoing a drastic shift wherein the brick and mortar model is giving a slow and steady way to digital banks. The way forward is digital and mobile banking and to understand globally the factors which impacts behavioral intention is of paramount importance for a global foot print. Another important point from a managerial perspective is that ING Direct has been a success story in terms of Australia as a geography whereas same bank is having challenging times in Germany. This again brings about an important point from the current research paper that location has indeed been an important variable to study with regards to digital and mobile banking.

4B.2 Limitations and future research focus areas

The present research has been able to meta statistically evaluate variables such as PU, PEOU, trust , social influence , perceived risk , attitude and compatibility with a location constraint in a global perspective. The above variables have to a certain extent been able to explain the behavioral intention to adopt mobile banking . But apart from the above variables , there are other variables which can be looked upon in explaining the causes of variance in mobile banking across countries. There can be more studies with major focus on location and can be broken down in subsets like : religion , belief, faith, climate , color , race and income. Moreover the present research has taken

out papers from the most popular data bases , and there is a possibility that we might have missed some important journals and studies pertaining to mobile banking. Another limitation is that only quantitative studies have been focused in the present meta analysis , and qualitative articles have not been touch based for the present analysis.

4C.3 Implications to theory and research :

The present research focuses on the most important variables affecting mobile banking intention adoption i.e. perceived use (PU) , perceived ease of use (PEOU) , trust , social influence , perceived risk , attitude and compatibility. It has been found through meta analysis that all the variables except perceived risk are positively related with behavioral intention to adopt mobile banking. Perceived risk is negatively associated with behavioral intention to adopt mobile banking indicating that risk element across international geographies has to be low so as to increase the chances of mobile banking adoption in the particular countries . Perceived risk should further be explored in terms of social risk, time risk, privacy risk & economic risk. In the sub group analysis, location has emerged as the most important variables responsible for heterogeneity across the planet. Location should further be explored in terms of religion, race, beliefs, income characteristics, and country for a micro view of the variation factors.

4D.4 Key lessons learnt

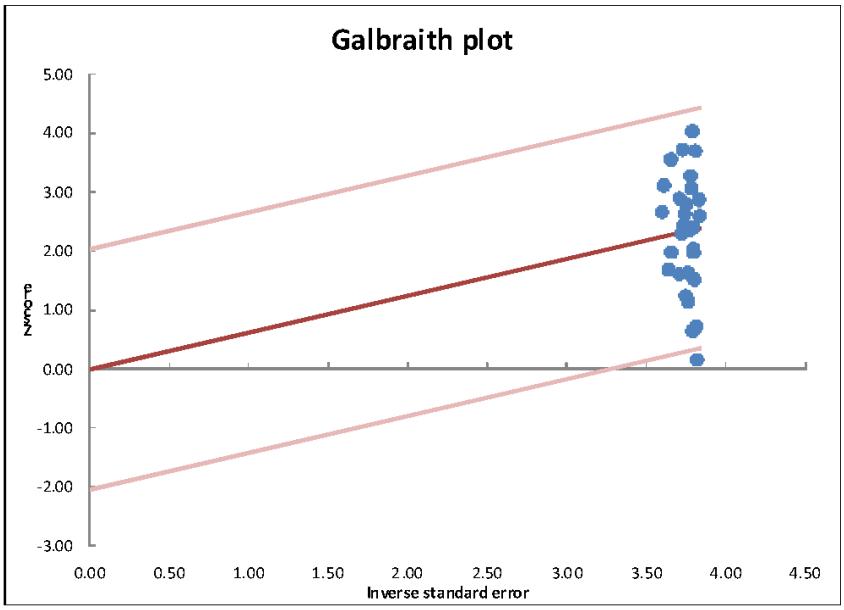
Mobile financial services adoption has been phenomenally affected by the seven bivariate relationships which we have studied namely PU, PEOU, trust, social influence, perceived risk, attitude and compatibility. The meta analysis of the above 7 bivariate relationships have revealed , that differences in the global framework exists because of location , and crystallizing location further into subsets of religion, colour, caste , wealth and country will provide further minute insights for both managers and the researchers. Perceived risk variable is a very important

characteristic, which managers have to explore very minutely while strategizing products for their companies. Since perceived risk is negatively affecting behavioural intention to adopt mobile banking, further subsets of perceived risk along with location needs to be deeply extrapolated for true success of mobile banking and future ready fintech companies.

Annexure 1

3.2.1.1 Perceived use (PU) to Behavioral intention (BI) :

Study name	Inverse standard error	Z-value
Tanikan Pipitchakaran & Nittaya Wo	3.80	1.98
Abdul Waheed Siyal & Donghong dir	3.73	3.72
Choi Meng leong	3.72	2.30
Deepak Chawla and Himanshu Joshi	3.83	2.89
Carlos flavian & Miguel Guinaliu	3.83	2.88
Gary Mortimer	3.71	2.89
Gary Mortimer	3.71	1.61
Charles Makanyeza	3.75	1.24
Abdullah M Baabdullah	3.78	3.28
Hossein Mohammadi	3.65	3.56
Apostolos Giovanis	3.84	2.60
Richard Glavee Geo	3.72	2.30
Deepak Chawla & Himanshu Joshi 1	3.83	2.89
Muhammad Bakhsh	3.82	0.15
Heikki Karjaluoto	3.61	3.12
Rakhi Thakur	3.60	2.67
Rajan Yadav and Sujeet K Sharma	3.74	2.44
Ali Abdallah Alalwan	3.78	3.07
Behzad Foroughi	3.79	4.04
Philip Mcgovern	3.75	2.79
Krishnamoorthy	3.74	2.64
Sadia Akhtar	3.76	1.14
Subhadip Roy	3.79	0.65
G Kumar and VM Shenbagaraman	3.66	1.98
Mohamed Gamal	3.64	1.69
Athapol	3.80	2.03
James Agyei	3.81	3.70
Mohammad Hamdi	3.76	1.64
Darmesh Krishnan	3.79	2.41
Komlan Gbongli	3.81	0.72
Sadia Akhtar	3.77	2.36
Subhadip Roy	3.80	1.52



	Regression estimate			
	Estimate	SE	CI LL	CI UL
Intercept	0.00			
Slope	0.62	0.04	0.53	0.71

The Galbraith plot clearly depicts that 95% of the studies are within the 2 confidence interval lines (pink colored lines).

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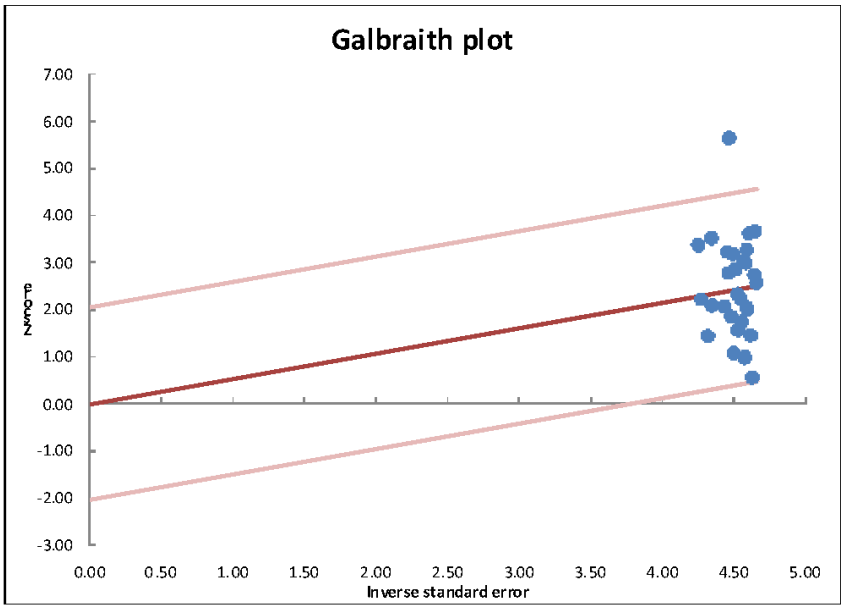
3.2.1.2 Perceived ease of use (PEOU) to Behavioral intention (BI) :

Study name	Inverse standard error	Z-value
Tanikan Pipitchakaran & Nittaya Wo	4.59	3.28
Abdul Waheed Siyal & Donghong dir	4.47	5.65
Choi Meng leong	4.46	2.78
Deepak Chawla and Himanshu Joshi	4.64	2.74
Carlos flavian & Miguel Guinaliu	4.65	3.67
Gary Mortimer	4.44	2.07
Gary Mortimer	4.43	2.07
Charles Makanyeza	4.50	1.08
Abdullah M Baabdullah	4.56	1.75
Hossein Mohammadi	4.34	3.52
Apostolos Giovanis	4.66	2.57
Richard Glavee Geo	4.45	3.23
Deepak Chawla & Himanshu Joshi 1	4.64	2.74
Muhammad Bakhsh	4.63	0.56
Heikki Karjaluoto	4.27	2.22
Rakhi Thakur	4.25	3.37
Rajan Yadav and Sujeet K Sharma	4.48	1.86
Ali Abdallah Alalwan	4.57	3.03
Behzad Foroughi	4.58	1.01
Philip Mcgovern	4.51	2.86
Krishnamoorthy	4.49	3.19
Sadia Akhtar	4.53	1.57
Subhadip Roy	4.58	0.98
G Kumar and VM Shenbagaraman	4.35	2.09
Mohamed Gamal	4.32	1.44
Athapol	4.59	2.05
James Agyei	4.61	3.62
Mohammad Hamdi	4.53	2.34
Darmesh Krishnan	4.58	3.00
Komlan Gbongli	4.62	1.46
Sadia Akhtar	4.55	2.24
Subhadip Roy	4.60	2.00

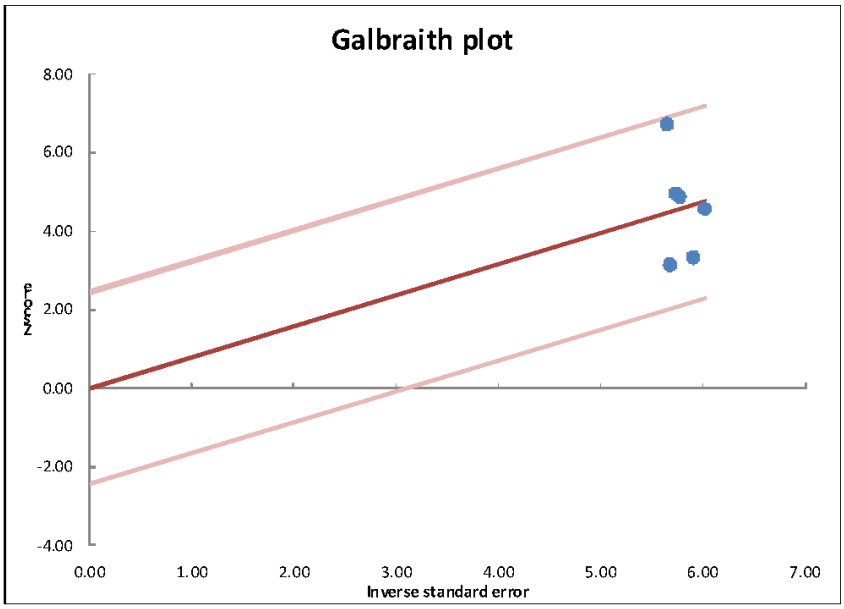


Regression estimate				
	Estimate	SE	CI LL	CI UL
Intercept	0.00			
Slope	0.54	0.04	0.46	0.62

There is no publication bias as 95% of the studies are within the confidence interval lines.

3.2.1.3 Trust to Behavioral intention (BI) :

Study name	Inverse standard error	Z-value
Tanikan Pipitchakaran & Nittaya Wo	5.90	3.34
Abdul Waheed Siyal & Donghong dir	5.65	6.73
Deepak Chawla and Himanshu Joshi	6.02	4.58
Deepak Chawla & Himanshu Joshi 1	6.02	4.58
Rajan Yadav and Sujeet K Sharma	5.67	3.15
Philip Mcgovern	5.73	4.96
Mohammad Hamdi	5.77	4.89

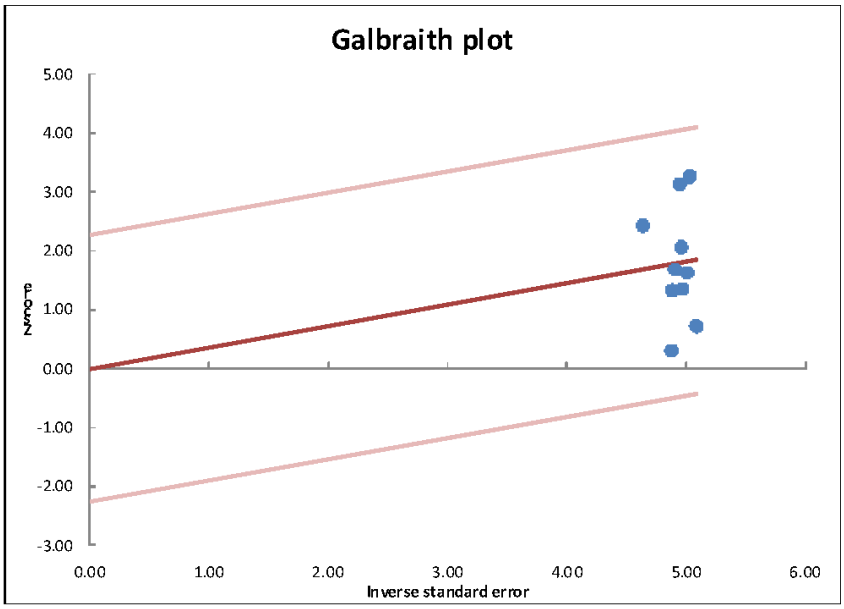


	Regression estimate			
	Estimate	SE	CI LL	CI UL
Intercept	0.00			
Slope	0.79	0.08	0.59	0.98

The plot clearly signifies that there is no publication bias as 95% of the studies are within the confidence interval lines.

3.2.1.4 Social influence to Behavioral intention (BI)

Study name	Inverse standard error	Z-value
Gary Mortimer	4.88	1.33
Gary Mortimer	4.88	0.31
Charles Makanyeza	4.97	1.35
Richard Glavee Geo	4.91	1.68
Rakhi Thakur	4.64	2.43
Rajan Yadav and Sujeet K Sharma	4.94	3.13
Krishnamoorthy	4.96	2.06
Sadia Akhtar	5.01	1.63
Athapol	5.09	0.72
Sadia Akhtar	5.03	3.27



	Regression estimate			
	Estimate	SE	CI LL	CI UL
Intercept	0.00			
Slope	0.36	0.06	0.22	0.50

The Galbraith plot clearly signifies that there is no publication bias between social influence and behavioral intention as 95% of the studies lies between the confidence interval lines.

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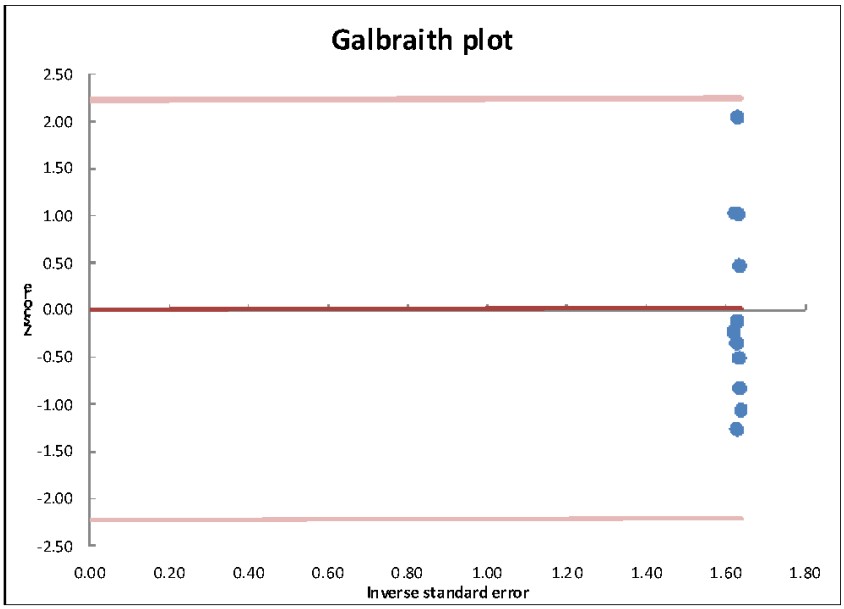
3.2.1.5 Perceived risk to Behavioral intention (BI)

Study name	Inverse standard error	Z-value
Abdul Waheed Siyal & Donghong dir	1.63	2.05
Gary Mortimer	1.63	-1.26
Gary Mortimer	1.63	-0.35
Hossein Mohammadi	1.62	1.03
Apostolos Giovanis	1.64	-1.06
Richard Glavee Geo	1.63	-0.11
Heikki Karjaluoto	1.62	-0.23
Ali Abdallah Alalwan	1.63	-0.51
Philip Mcgovern	1.63	1.02
Athapol	1.63	0.47
Darmesh Krishnan	1.63	-0.83



Regression estimate				
	Estimate	SE	CI LL	CI UL
Intercept		0.00		
Slope		0.01	0.19	-0.41	0.43

The relationship between perceived risk and behavioral intention is clearly depicted by Galbraith plot signaling nil publication bias in the aforementioned bivariate relationships.

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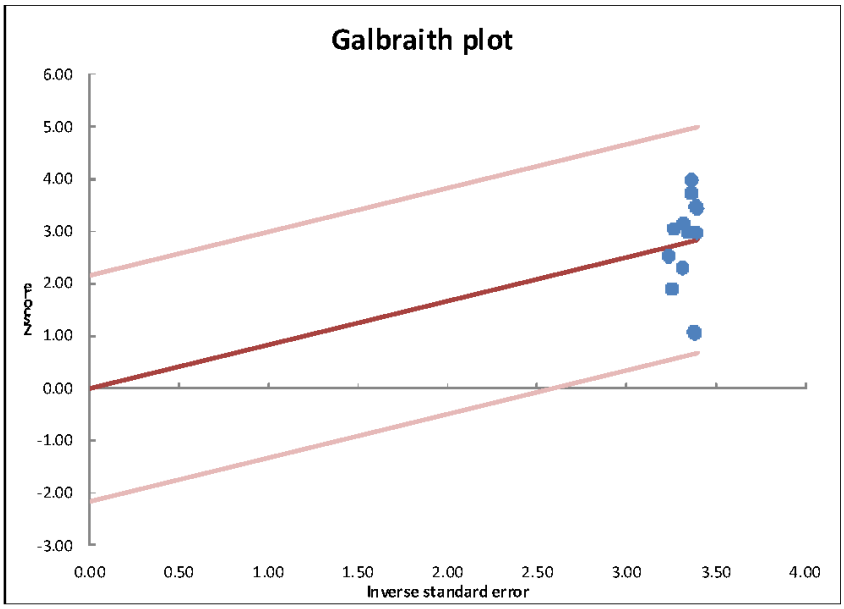
3.2.1.6 Attitude to Behavioral intention

Study name	Inverse standard error	Z-value
Abdul Waheed Siyal & Donghong dir	3.32	3.14
Deepak Chawla and Himanshu Joshi	3.39	3.47
Carlos flavian & Miguel Guinaliu	3.39	2.97
Hossein Mohammadi	3.27	3.05
Apostolos Giovanis	3.39	3.44
Richard Glavee Geo	3.31	2.30
Deepak Chawla & Himanshu Joshi 1	3.39	3.47
Muhammad Bakhsh	3.38	1.05
Heikki Karjaluoto	3.24	2.53
Behzad Foroughi	3.36	3.72
Mohamed Gamal	3.26	1.90
Mohammad Hamdi	3.34	2.99
Darmesh Krishnan	3.37	3.98
Komlan Gbongli	3.38	1.08



Regression estimate				
	Estimate	SE	CI LL	CI UL
Intercept	0.00			
Slope	0.84	0.07	0.68	0.99

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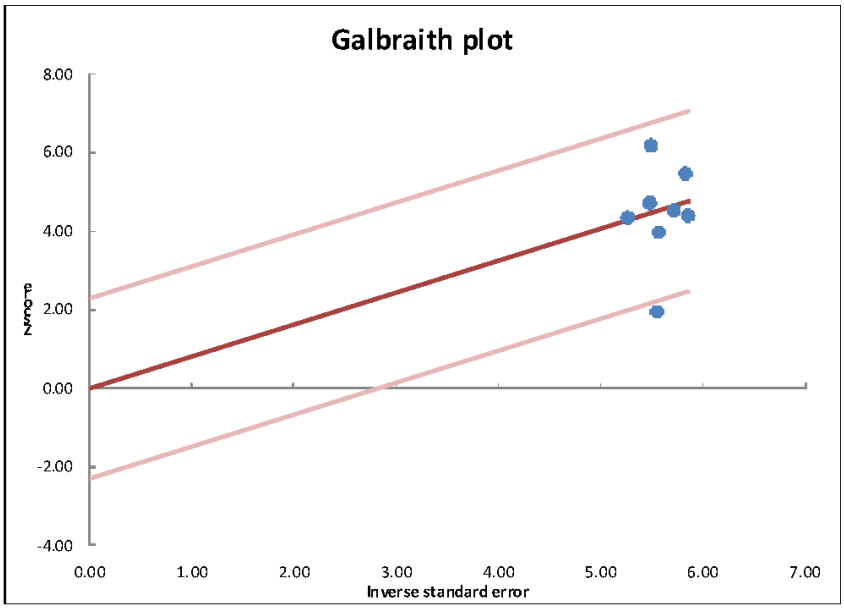
3.2.1.7 Compatibility to Behavioral intention

Study name	Inverse standard error	Z-value
Abdul Waheed Siyal & Donghong dir	5.49	6.19
Choi Meng leong	5.48	4.73
Deepak Chawla and Himanshu Joshi	5.83	5.47
Charles Makanyeza	5.55	1.95
Hossein Mohammadi	5.26	4.35
Apostolos Giovanis	5.85	4.40
Deepak Chawla & Himanshu Joshi 1	5.83	5.47
Philip Mcgovern	5.57	3.97
Athapol	5.71	4.53



	Regression estimate			
	Estimate	SE	CI LL	CI UL
Intercept	0.00			
Slope	0.81	0.07	0.65	0.97

The Galbraith plot for this aforementioned relationship between compatibility and behavioral intention signifies " no publication bias".

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Exploring Crowdfunding Creators' Preparedness in Reward-based Crowdfunding Success

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Abstract

Crowdfunding becomes a popular phenomenon that enables entrepreneurs to raise external financing from a large number of funders through Internet. Nevertheless, many projects failed to achieve their expected funding target. While a large body of knowledge rapidly accumulated, the mechanism of crowdfunding success is still far from well understood. Drawing from literature of entrepreneurship, we investigate the impact of reward-based crowdfunding creators' preparedness on crowdfunding success which is understudied in prior research. In particular, we examine their preparedness reflected in both project presentation and following updates. Based on real data of 205 crowdfunding projects of independent movies, we conduct both linear regression and negative binomial regression analysis to test our hypotheses. We find that entrepreneurs' preparedness manifested through project presentation (the number of introductory video views and the number of Wishlist images) has a significant impact on crowdfunding success. As for the following updates, our results show that the number of updates is essential to crowdfunding success, but posting fast update is not. Our research provides useful managerial insights that can help entrepreneurs enhance the likelihood of crowdfunding success.

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1. Introduction

In recent years, crowdfunding has become a popular phenomenon through which "an entrepreneur raises external financing from a large audience (the "crowd")" (Belleflamme et al. 2014). Crowdfunding creators who want to raise capital for their new projects present them on online crowdfunding platforms such as Kickstarter and GoFundMe. After reviewing these displayed projects, potential funders can decide whether to support and how much to contribute.

Crowdfunding has experienced a rapid development worldwide. According to Statista's recent industry forecast, the global crowdfunding market reached US$13.9 billion US dollars by 2020 and will be expected to triple by 2026. Compared with traditional model of fundraising, crowdfunding has the following advantages. First, crowdfunding provides an opportunity for entrepreneurs to get funding quickly, especially for those who might otherwise struggle with traditional investors such as venture capital and angel investors (Li et al. 2017). Second, crowdfunding allows crowdfunding creators to better control their fund-raising process. For example, they can decide when to launch their projects, how long to display them, what information to present, and how to interact with participants to attract contribution, etc. Third, engagement of social media such as Facebook helps promote crowdfunding and spread stories of successful projects (Robinson 2017).

Crowdfunding can be generally divided into four categories: reward-based crowdfunding, equity-based crowdfunding, donation-based crowdfunding, and debt-based to crowdfunding (Lukkarinen et al. 2016). We focus on reward-based crowdfunding for two reasons. First, it is a widely used crowdfunding model on current online crowdfunding platforms. Second, reward-based crowdfunding often only offers non-monetary incentives such as pre-order products or service with earlier delivery or better price (Gerber and Hui 2013). Consequently, entrepreneurs need to obtain insights to improve chances of their funding success, which raises interesting research questions.

It is crucial for entrepreneurs to get fully funded via reward-based crowdfunding. Although thousands of projects are displayed on major crowdfunding platforms such as Kickstarter, Indiegogo, and GoFundMe every day, many of them fail to achieve their expected funding targets. The average success rate of crowdfunding projects is only 22.4%, and the success rate on one popular crowdfunding platform Kickstarter only goes up slightly over 37%. (Joshua 2020).

Naturally, researchers have been greatly interested in identifying determinants of crowdfunding success. Nevertheless, prior research mainly focuses on "what properties this project has" or "who the project creators are". the impact of entrepreneurs' preparedness is understudied while it can be a critical factor. In another word, little research attention has been paid to "how well prepared the project creators are". Entrepreneurs' preparedness is defined as "the extent to which the entrepreneur has thought about and thought through specific aspects of his or her business" (Cardon et al. 2017 p. 1064).

Prior studies show that entrepreneurs' preparedness plays a vital role in their fund-raising through traditional channels (Chen et al. 2009, Cardon et al. 2017). Potential backers in crowdfunding platforms are usually non-professional investors who lack expertise in venture management, which makes the perceived preparedness a more salient factor in their decision-making. Yet there is a lack of rigorous empirical analysis of entrepreneurs' preparedness in crowdfunding, not to mention providing useful recommendations. To fill this research gap, we attempt to highlight the importance of entrepreneurs' preparedness and investigate its impact (through both project presentation and following updates) on crowdfunding success under a theoretical guidance.

We conduct an empirical analysis with a unique dataset of 205 reward-based crowdfunding projects of independent movies. Our main findings are as follows. First, crowdfunding creators' preparedness manifested through introductory video has a significant impact on crowdfunding success. The more views the video attracts, the better the performance will be. Second, crowdfunding success is significantly influenced by entrepreneurs' preparedness reflected in color images of WishList items. Third, the number of updates contributes to crowdfunding success, but the speed of posting first update does not exert significant impact. While little has research focused on the entrepreneurs' preparedness, we believe our results demonstrated that it is a key success driver. The market of reward-based crowdfunding is undergoing a rapid development. We aim to help entrepreneurs better convince potential funders of and enhance their chance of success.

The rest of the paper is organized as follows. Section 2 provides a comprehensive review of relevant research in the literature of both entrepreneurship and crowdfunding. In Section 3, we develop a set of hypotheses of the impact of entrepreneurs' preparedness on crowdfunding success. Section 4 introduces the crowdfunding of independent movies and describes our unique dataset collected online. We test the proposed hypotheses and present the results of both linear regression and negative binomial regression analysis in section 5. Then we discuss the theoretical and practical implications of this research in section 6. Section 7 concludes the paper with future research directions and limitations.

2. Literature Review

Our research is closely related to two streams of research. The first research stream is literature of entrepreneurship. Crowdfunding creators share with entrepreneurs the pressure for fundraising. Therefore, we focus on literature of entrepreneurship especially that on entrepreneurs' preparedness to develop our research instruments. Although researchers often entrepreneurs' study

passion and preparedness together, they refer to different manifestations of persuasion efforts. While passion refers to the affective aspect of entrepreneurs' efforts, preparedness refers to the cognitive aspect of entrepreneurs' efforts (Chen et al. 2009, Cardon et al. 2017). For example, Chen et al. (2009) pointed out that entrepreneurs' preparedness can be reflected in the quality of business plan presented to the venture capitalists (VC) and in the way they respond to the VCs' questions.

Prior research has mainly analyzed the impact of entrepreneurs' preparedness in the process of convincing investors through traditional fundraising channels (Chen et al. 2009, Pollack et al. 2012, Galbraith et al. 2014, Cardon et al. 2017). For example, Chen et al. (2009) investigated the impact of entrepreneurs' passion and preparedness in a 15-minute business plan presentation on their fundraising performance. Using an experiment with 126 MBA and EMBA students and an annual University competition of business plan with 55 investors in a public university in United States, the authors showed that entrepreneurs' preparedness has a significant impact on the fundraising outcomes, but their passion does not. Pollack et al. (2012) studied new ventures' funding in televised business pitches. Using data of 98 television episodes from 2005 to 2010, they found that entrepreneurs' preparedness behavior is positively associated with the amount of funding they received. Analyzing 22 technology projects that apply for grant funding, Galbraith et al. (2014) found that entrepreneurs' preparedness plays a significant role in influencing review panel's assessment of the proposed project. However, little research has studied the role entrepreneurs' preparedness has played in the context of reward-based crowdfunding.

Consistent with literature of entrepreneurship, we view crowdfunding as a persuasion process in which entrepreneurs persuade potential funders to support them with financial contribution. In general, there are two theoretical approaches. One approach uses dual-process models such as

Elaboration likelihood model (ELM) proposed by Petty and Cacioppo (1986). ELM suggests that message influence is exerted through two different routes (content of the message through central route and cues other than the message itself through peripheral route) and the influence of the two routes is both quantitatively and quantitatively different (Zhou et al. 2018). Another approach adopts Uni-model theory which assumes that these two types of persuasive information function equivalently and have same effect in the persuasion process (Chen et al. 2009).

We choose Uni-model theory for the following two reasons. First, potential funders in crowdfunding platforms usually do not have expertise to evaluate project quality and only contribute relatively small amount (Li et al. 2017). Thus, it might not be easy for them to distinguish central route message from peripheral route message. On the other hand, Uni-model clearly defines the source of influential factors in reward-based crowdfunding. Second, it is not easy to identify different types of funders of ELM model in the crowdfunding platform such as experienced backers versus inexperienced backers (Allison et al. 2017) and consumer backers and investment backers (Xiang et al. 2019).

The second research stream is the literature of crowdfunding which focuses on identifying key factors that motivate contribution and drive crowdfunding success. Although the quality of project is considered to be positively associated with crowdfunding success (Mollick 2014), evaluating the quality and potential of crowdfunding projects requires high level of expertise. As a result, current research turns to seek factors that may directly or indirectly influence crowdfunding success. Some studies find that features of crowdfunding projects such as preparation time (Kunz et al. 2016), project duration (Lukkarinen et al. 2016), funding target (Mollick 2014, Lagazio and Querci 2018), location of projects (Agrawal et al. 2015), type of crowdfunding model (Strausz 2015, Cumming et al. 2019), financial commitment (Loher et al. 2018), project team's use of media (Courtney et al.

2017) and verbal description (Parhankangas and Renko 2017, Calic and Shevchenko, 2020) are closely associated with funding success.

Some other studies have shown that characteristics of project creators such as their social capital (Zheng et al. 2014, Colombo et al. 2015, Wu et al. 2015, and Polzin et al. 2017), social network (Mollick 2014, Lukkarinen et al. 2016), previous experience (Nofsinger and Wang 2011, Zheng et al. 2016), education (Allison et al. 2017), types of entrepreneurs (Oo et al. 2019) and gender (Harrison and Mason 2007) have an important impact on crowdfunding success. Furthermore, researchers suggested that the cultural and demographic environment of projects has a significant effect in funding success including the nature of population (Li et al. 2020), social identity (Kromidha and Robson 2016), backers' willingness to help (Cholakova and Clarysse 2015), and local community of crowdfunding backers (Gerber and Hui 2013, Josefy et al. 2017, Murray et al. 2020).

Guided by persuasion theory, our study differs from prior research by identifying understudied success drivers of reward-based crowdfunding that are related to entrepreneurs' preparedness. So far relevant research in this area, especially empirical research is scarce. Zhou et al. (2018) investigated entrepreneurs' persuasion efforts through project description. However, their study only examined verbal description. As for the entrepreneurs' updates, Xu et al. (2014) analyzed project creators' updates using a text mining approach rather than a persuasion theory approach. In addition, they only focus on whether the crowdfunding campaigns succeed or not rather than the amount of funding raised and the number of backers. To the best of our knowledge, our research is the first comprehensive analysis that investigates the impact of entrepreneurs' preparedness through both project presentation and follow-up updates.

3. Hypothesis development

Based on related research in the literature of entrepreneurship and crowdfunding, we explore the key factors of entrepreneurs' preparedness. We first look at factors of preparedness through project presentation. Previous literature shows that business plan presentation is critical to entrepreneurs' success in raising fund from traditional investors (Chen et al. 2009, Galbraith et al. 2014). We argue that presentation of crowdfunding projects plays a similar role in the persuasion process.

Lagazio and Querci (2018) pointed out that entrepreneurs need to use effective media to convey their attitudes and behavior in presentations. One key media to present preparedness of crowdfunding projects is the introductory video. Currently, most platforms encourage crowdfunding creators to display a video on top of the webpage to introduce their projects, including what motivates the project creators, what the project will deliver, how they are going to use the funding, etc. (Mollick 2014, Li et al. 2017). Since this video is usually the first item viewed by potential backers, it serves as an important indicator of how well-prepared entrepreneurs are. Zampetakis et al. (2015) reported that entrepreneurs can effectively use short films to achieve positive feedback. We suggest a similar relationship exists in the online reward-based crowdfunding. The higher number of views of the video, the higher potential funders value project creators' preparedness.

Current research usually just examines whether there is a video on not (Mollick 2014, Bi et al. 2017, Shahab et al. 2019). We extend the analysis into the popularity of introductory video and measure it by the number of views the videos attract. Generally, a positive relationship is expected between the number of views and crowdfunding success. Therefore, we propose the following hypothesis:

H1. Crowdfunding success is positively associated with the number of views of the introductory video. The higher the number of views of the introductory video is, the better performance it will achieve.

We claim that another essential factor of entrepreneurs' preparedness is the number of critical item images contained in project presentation. Prior research found that project presentations with color images help entrepreneurs to attract attention from panel of assessment (Galbraith et al. 2014) and improves the evaluators' favorability (Chan and Park 2015), which increases chance of obtaining grant funding from traditional investors. We claim that a similar impact exists in crowdfunding. The platform of our data collection, Seed and Spark, allows project creators to present color images of the WishList items, ranging from food service, equipment cost, travel expense, post-production cost, production insurance, etc. Related costs vary from several hundred to several thousand dollars.

While introductory videos give visual persuasion, color WishList item images provide more detailed information of entrepreneurs' preparedness. Using different elements enriches the presentation content and generates a higher level of comprehension. They not only reflect project creators' preparedness, but also help justify the proposed funding target and garner interests. For example, WishList items with higher cost naturally increase the perception of funding target. Shahab et al. (2019) suggested a similar effect in individual investors' decision-making, but they only examine whether images exist. In addition, the number of WishList item images signals entrepreneurial orientation which is found to positively affect crowdfunding success (Calic and Shevchenko 2020). Consequently, we suggest that higher number of color images of WishList items makes entrepreneurs' persuasion process easier. Therefore, we propose the following hypothesis:

H2. Crowdfunding success is positively associated with the number of color images of WishList items. The higher the number of color images of WishList items is, the better performance will be.

Next, we focus on entrepreneurs' preparedness through follow-up updates. Crowdfunding projects are ongoing process which usually last 30 days or more. There is growing acknowledgment that backers might assess crowdfunding projects not only by initial presentation but also by continuing updates. We often see funders contributing for the second time or the third time in Seed and Spark. Consequently, entrepreneurs need to continually make a compelling case to engage potential investors (Zhou et al. 2018). One effective persuasion method is through updates (Xu et al. 2014). Platforms such as Seed and Spark allow entrepreneurs to post updates related to their projects. Our observed updates include the progress of movie production such as "We have a new addition in our cast" and "Here is the official trailer for the film", and plan of the project such as "I am happy to say that Chasing Sunshine has been accepted to screen at Comedy World Network Film Festival at the end of November in Vegas".

By posting follow-up updates of all the actions taken and the progress made, entrepreneurs can keep investors updated and engaged (Dorfleitner et al. 2018), establish investors' trust in them (Zheng et al. 2016), and prove the quality of their projects (Shahab et al. 2019). In this regard, updates represent how well-prepared entrepreneurs are with their projects (Li et al. 2017). We use the number of updates because it measures the strength of crowdfunding creators' preparedness. The more updates the project provides, the stronger signal it will be in terms of their preparedness. In addition, updates increase hit rate of projects (Shahab et al. 2019), which will probably motivate current and potential funders' active involvements in the campaigns. Therefore, we propose the following hypothesis:

H3. Crowdfunding success is positively associated with the number of updates. The higher the number of updates is, the better performance will be.

We examine the impact of entrepreneurs' update quickness as well. While the number of updates reflect entrepreneurs' preparedness, the speed of posting upgrade also serves as an important indicator of their preparation. Chen et al. (2009) claimed that entrepreneurs' preparedness is reflected in how they respond to investors as well as how fast they do so. Potential funders on crowdfunding platforms can easily identify how fast updates are posted. We focus on how fast project creators post the first update because it is an important indicator for potential investors to draw inferences. Projects with first update in one day or two days provide strong signals of entrepreneurs' preparedness. In contrast, campaigns without an update for 20 or 25 days will fail in their persuasion efforts.

Bretschneider and Leimeister (2017) found that crowdfunding backers are pro-socially motivated when they like the project. However, an overly slow update might bring the concern of how serious project creators really are, which will discourage potential funders, even those with strong personal preference. On the other hand, a project with quicker first update will likely attract more potential funders and increase their willingness to contribute. Similar motivation effect was reported in participants' contribution in online idea generation platform (Chen et al. 2012). We choose three days as the threshold because prior research suggests that updates within three days can be considered as a signal of high quality (Mollick 2014). Therefore, we propose the following hypothesis:

H4. Performance of crowdfunding projects which receive an update within three days is higher than those which do not.

We summarize the proposed hypotheses in the following conceptual model (Figure 1). To test these hypotheses, we collected real data from an online crowdfunding platform (Seed and Spark) and conducted multiple regression analysis to review potential key drivers of crowdfunding success.

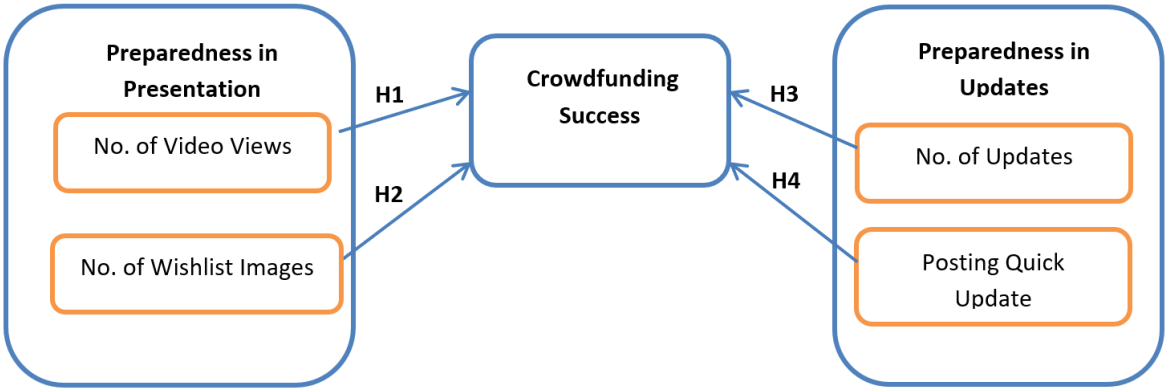

Figure 1. Conceptual Model

4. Data

We test the proposed hypotheses using a unique dataset of reward-based crowdfunding projects of independent movies. Researchers often use projects of one specific category to study crowdfunding success such as art (Agrawal, et al. 2015), movie theater (Josefy et al. 2017) and technology (Li et al. 2017). We choose this category for the following two reasons. First, fund-raising by traditional channels is extremely challenging for the producers of independent movies,

especially for those less well-known ones (Stengel 2020). As a result, they need to show they are well-prepared to convince potential investors, which justifies the need to explore the understudied factors of crowdfunding creators' preparedness reflected in introductory videos and WishList images. Second, successful persuasion can attract a large number of funders of crowdfunding independent movies, which makes crowdfunding an effective and promising option (Lincoln 2018, Wezowski 2016). We have witnessed several successful cases of crowdfunding (Rappaport 2014, Barnes 2015, Wezowski 2016). While our study focuses on independent movies, our findings can be applied to other categories of reward-based crowdfunding.

We collected data of 205 independent movie projects from Seed and Spark between June 2020 to October 2020. Seed and Spark is a popular online crowdfunding website of independent movies and videos. It also enables fans to discover and enjoy independent web series. In addition, our sample size is consistent with prior studies. For example, Josefy et al. (2017) used 176 reward-based crowdfunding projects to analyze the impact of social community. Li et al. (2017) used 100 crowdfunding projects from Indiegogo platform and 122 crowdfunding projects from Kickstarter platform.

In line with prior research, we measure crowdfunding success by the amount of fund raised (in natural log format to reduce skewness) and the number of investors because successful projects aim to attract both abundant funding and a large number of investors (Lukkarinen et al. 2016, Vismana 2016). Existing research also uses dummy variable of whether the funding target is achieved as dependent variable (Mollick 2014). We believe our measurements provide more detailed information about crowdfunding success. Both measures are clearly listed on the project webpage and are easily observable to funders.

The independent variables include the number of introductory video views, the number of color images of Wishlist items, the number of updates, and the dummy variable of posting quick update (in three days). To test hypothesis 1, we record the number of views that the introductory videos which are usually displayed in YouTube.com and Vimeo.com. Since this variable is highly skewed, we use the natural-log transformation. To test hypothesis 2, we record the number of color images of Wishlist items. To test hypothesis 3, we count the number of updates of each project during the whole crowdfunding duration. To test hypothesis 4, we use the dummy variable $D\_Qupdate$ which equals one if the first update of the project comes in three days after the project is launched, and zero otherwise.

Following the literature, we incorporate values of a number of control variables that might potentially influence the crowdfunding performance. At the movie level, we control the movie features including the project duration (Lukkarinen et al. 2016), the number of movie production team members (Stanko and Henard 2017), the funding target (Lagazio and Querci 2018), and the number of followers in the social network (in natural log format to reduce skewness) of the independent movie such as Facebook and Instagram (Zheng et al. 2014).

At the producer level, we control the producer's prior experience in terms of the number of previous movies (Nofsinger and Wang 2011, Cardon et al. 2012). We also control the effect of the producer's gender (Harrison and Mason 2007) and location (Agrawal et al. 2015). The dummy variable D_Fem equals one if the movie producer is female, and zero otherwise. Similarly, the dummy variable D_CA equals one when the movie producer lives in the state of California in which movie production is well-established, and zero otherwise. Table 1 below presents the summary statistics of the collected data.

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Table 1. Summary Statistics

Variable	Definition	Min	Average	Max	Standard Deviation
RaisedFund	Log of amount of funding raised	7.049	9.180	11.554	0.748
No_Investors	Number of the investors	10	112.00	859	98.167
No_Update	Number of the updates	0	6.341	30	5.510
D_Qupdate	Dummy variable: 1 for project with its first update in three days from the starting date, 0 otherwise	0	0.346	1	0.477
No_Vidview	Number of views of the	3.738	5.660	8.340	0.727

	introductory video				
No_Wishlist	Number of color images of Wishlist items	1	6.815	22	3.033
TargetFund	Amount of target funding	1100	13256.10	100,000	12589.67
Duration	Number of days of the crowdfunding	15	32.829	60	6.181
Team	Number of team members	2	6.278	20	3.462
No_Fol	Log of the number of followers in social network	2.197	5.807	9.622	1.189
PreProj	Number of previous	0	0.161	3	0.473

	crowdfunding projects				
D_Fem	Dummy variable: 1 for female producer, 0 otherwise	0	0.585	1	0.494
D_CA	Dummy variable: 1 for producer from California, 0 otherwise	0	0.424	1	0.495

5. Model and results

5.1. Results

In line with prior research, we use linear regression when the dependent variable is raised funding and use negative binomial regression when the dependent variable is the number of investors (Lukkarinen et al. 2016, Vismana 2016). They are appropriate methods fit for our dependent variables. We do not adopt Probit or Logit model because our dependent variable is not a dummy variable. Our regression model is as follows:

$$Success = \beta 0 + \beta 1 * No\_Vidview + \beta 2 * No\_WishList + \beta 3 * No\_Update + \beta 4 * D\_Qupdate + Control + \varepsilon$$

We have checked the correlation values among those independent and control variables. Our results show that no extremely high value implies too close relationship. Table 2 below presents the correlation matrix. In addition, we have computed Variance inflation factors (VIF) to check whether the problem of multicollinearity exists between independent variables that might bring any undesired effects. The result shows that all VIF values are less than 2.0, which suggests that multicollinearity is not an issue here (Wooldridge 2002).

Table 2. Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11
1. No_Vidview	1										
2. No_WishList	0.18*	1									
3. No_Update	0.22	0.1	1								

	* *	7 *									
4. D_ Qup date	0 . 1 2	- 0 . 1 0	0 . 3 9 * * *	1							
5. Tar getF und	0 . 4 4 * * *	0 . 2 9 * * *	0 . 1 5 *	0 . 1 0	1						
6. No_ Fol	0 . 3 1 * * *	0 . 1 4 *	0 . 1 7 *	0 . 0 9	0 . 2 3 * *	1					

7. Team	0.12	-0.06	-0.11	0.02	0.22**	0.02	1				
8. Duration	0.04	0.06	0.00	-0.11	0.17*	0.01	-0.02	1			
9. PreProj	0.04	-0.08	0.01	-0.10	0.08	-0.03	0.22**	-0.04	1		
10. D_Fem	0.08	0.04	0.10	0.01	-0.11	-0.07	-0.12	-0.05	-0.07	1	

11. D_CA	0.09	0.08	0.11	0.08	0.17*	-0.15*	-0.06**	-0.03	-0.02	0.03	1

Note: *** p<0.001 ** p<0.01 * p<0.05

5.2. Results

We first present the results of the linear regression which uses the raised fund as the dependent variable. To assess the robustness of the hypotheses, we conduct regression analysis of four models with varying sets of control variables. Model 1 only includes the four independent variables: the number of views of introductory video, the number of color images of Wishlist items, the number of updates, and the dummy variable of quick update. In Model 2, we include the independent variables together with control variables at the movie level: the target funding, the project duration, the number of team members and log of the number of followers in social network. Model 3 includes the independent variables together with control variables at the producer level: the number of previous projects, the two dummy variables of the gender and location of the producer. In Model 4, we include the independent variables together with control variables on both movie level and producer level. Table 3 below summarizes the results.

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Table 3. Summary of linear regression (Standard errors in the parentheses)

	Model 1	Model 2	Model 3	Model 4
Intercept	5.973 (0.331)***	7.692 (0.290)***	6.005 (0.327)***	7.681 (0.293)***
No_Vidview	0.465 (0.060)***	0.198 (0.043)***	0.466 (0.059)***	0.198 (0.043)***
No_WishList	0.063 (0.014)***	0.021 (0.010)*	0.060 (0.014)***	0.018 (0.010)*
No_Update	0.017 (0.009)*	0.016 (0.006)**	0.018 (0.008)*	0.016 (0.006)**
D_Qupdate	0.113 (0.097)	0.027 (0.063)	0.089 (0.096)	0.005 (0.064)
TargetFund		0.000 (0.000)***		0.000 (0.000)***
No_Fol		-0.008 (0.024)		-0.006 (0.025)
Team		-0.024 (0.008)*		-0.020 (0.008)*
Duration		-0.007 (0.004)		-0.008 (0.004)
PreProj			-0.052 (0.088)	-0.119 (0.059)
D_Fem			-0.157	-0.012

			(0.084)	(0.056)
D_CA			0.195 (0.084)	0.053 (0.057)
Adjusted R-square	0.3652	0.7359	0.3832	0.7368

Note: *** p<0.001 ** p<0.01 * p<0.05

We then present the results of the negative binomial regression which uses the number of investors as the dependent variable. Using the similar approach of linear regression, we carried out analysis of four models with different sets of control variables. Table 4 below summarizes the results.

Table 4. Summary of negative binomial regression (Standard errors in the parentheses)

	Model 1	Model 2	Model 3	Model 4
Intercept	0.872 (0.290)**	1.863 (0.360)***	0.860 (0.290)**	1.865 (0.360)***
No_Vidview	0.558 (0.052)***	0.410 (0.053)***	0.553 (0.052)***	0.388 (0.053)***
No_WishList	0.050 (0.013)***	0.028 (0.012)*	0.050 (0.013)***	0.025 (0.012)*
No_Update	0.023 (0.007)**	0.024 (0.007)***	0.023 (0.007)**	0.025 (0.007)***
D_Qupdate	0.163 (0.084)	0.104 (0.078)	0.158 (0.085)	0.088 (0.078)
TargetFund		0.000		0.000

		(0.000)***		(0.000)***
No_Fol		0.042 (0.030)		0.046 (0.030)
Team		0.002 (0.010)		0.006 (0.010)
Duration		-0.016 (0.006)		-0.016 (0.006)
PreProj			-0.037 (0.079)	0.078 (0.073)
D_Fem			0.082 (0.075)	0.171 (0.069)
D_CA			0.015 (0.074)	-0.033 (0.070)
2*log-likelihood	-2152.949	-2113.848	-2151.375	-2106.368

Note: *** p<0.001 ** p<0.01 * p<0.05

We first examine the impact of crowdfunding creators' preparedness through presentation. Regarding the number of views of the introductory video, we find that this factor exerts a significant and positive effect on crowdfunding success (p<0.001 for all four models in Table 3 and for all four models in Table 4). Therefore, H1 is supported. Lagazio and Querci (2018) argued that successful crowdfunding depends on marketing and organizational features. With the introductory video displayed on top of each project webpage, it serves as an effective marketing feature to attract potential backers. Zampetakis et al. (2017) reported that videos can change

viewers' attitude towards entrepreneurs. Sharing video provides more opportunities to gain new followers. This finding implies that entrepreneurs should consider the introductory video as a key component of their persuasion strategy. Furthermore, they need to figure out how to promote their videos to engage as many viewers as possible.

We also find evidence which shows that the number of color images of WishList items is a key success driver of crowdfunding projects ($p<0.05$ for all four models in Table 3 and for all four models in Table 4). The more images of WishList items displayed, the higher amount of funding and number of investors attracted. It offers support for H2. Brush et al. (2012) found that new ventures' perceived readiness, especially through tangible and objective features, is important in fundraising. Kaminski and Hopp (2019) claims that visualization and presentation of crowdfunding projects are important success drivers. Since WishList item images are easily observed, they serve as a key tangible feature that signals the entrepreneurs' preparedness. Our finding indicates that visual presentation of color images can be a critical factor of entrepreneurs' persuasion efforts.

Then we analyze entrepreneurs' preparedness through follow-up updates. We first check the impact of the number of updates. Our results show that higher number of updates will bring significantly higher raised funding ($p<0.05$ for all four models in Table 3) and larger number of investors ($p<0.01$ for all four models in Table 4). It offers support for H3. Block et al. (2018) found that updates have positive effect on participation and performance of equity-based crowdfunding projects. This finding demonstrates the similarly important role of updates in project creators' persuasion in reward-based crowdfunding. Moreover, more updates provide evidence of project creators' expertise, which help inspire backers' trust and confidence (Petruzzelli et al.

2019). Our results suggest that entrepreneurs need to consider adding more updates in crowdfunding duration.

Regarding the factor of posting the first update in three days, we have seen positive but not significant impact in all four models in Table 3 and all four models in Table 4. Although the direction of the coefficient is consistent with our hypothesis, the strength is not. While this finding does not necessarily disprove the importance of speed of posting updates, it demonstrates that an early update alone does not guarantee persuasion of potential funders. Therefore, H4 is not supported. There may be several reasons for this result. One possibility is that latest updates are listed first on the project webpages. As a result, potential funders might overlook the response speed of the first update, especially when many updates are displayed. Another possible explanation is that later updates of a major progress might reduce the negative impact of slow response of early updates. For example, we often observed that a later update of attending of a major independent movie festival attracts attention of funders. Nevertheless, our results have shown an overall consistent and significant support for most of the proposed hypotheses. Table 5 below summarizes the results of hypotheses testing.

Table 5. Summary of hypotheses testing results

Hypothesis	Support?
H1. Crowdfunding success is positively associated with the number of views of the introductory video. The higher the number of views of the introductory video is, the better performance it will achieve.	Yes
H2. Crowdfunding success is positively associated with the number of color images of WishList items. The higher the number of color images of WishList items is, the better performance will be.	Yes
H3. Crowdfunding success is positively associated with the number of updates. The higher the number of updates is, the better performance will be.	Yes
H4. Performance of crowdfunding projects which receive an update within three days is higher than those which do not.	No

6. Discussion

6.1 Theoretical implications

Our research makes three main contributions. First, our research extends the conceptual framework of crowdfunding success by investigating the underexplored factor of entrepreneurs' preparedness. While existing research on crowdfunding success mainly focuses on features of crowdfunding projects and personal characteristics of entrepreneurs, little effort has been made to investigate the impact of their preparedness. This study is one of the few exploratory empirical efforts that shows the vital role of entrepreneurs' preparedness in reward-based crowdfunding success.

In addition, previous studies of persuasion often rely on subjective evaluation of passion (Chen et al. 2009, Davis et al. 2017, Cardon et al. 2017) and verbal presentation (style and tone) used in business plan (Parhankangas and Renko 2017). However, manifestation of passion through speech presentation, facial expression and body language is not observable in crowdfunding platforms. Visualization in presentation becomes more important in crowdfunding projects (Kaminski and Hopp 2019). As a result, entrepreneurs need to present their preparedness in objective and observable forms to potential funders such as introductory videos and WishList images. Our findings can be applied to a broader range of persuasion processes in which entrepreneurs need to effectively present their preparedness.

Second, our study enriches the studies of entrepreneurs' preparedness by exploring a new dimension of continuing persuasion by follow-up updates. In current business practice, reward-based crowdfunding campaigns usually last 30 days or more. Consequently, entrepreneurs need to implement proactive and strategic approach to attract ongoing attention from funders and engage them throughout the whole crowdfunding process (Zheng et al. 2016). However, most previous studies have often overlooked this fact and only examined at entrepreneurs' persuasion efforts reflected in the initial business plan (Chen et al. 2009, Allison et al. 2017).

Our approach incorporates crowdfunding creators' preparedness through continuing interaction as well, which provides a useful perspective to study the dynamics between entrepreneurs and funders. We have specifically assessed the impact of key factors such as number of updates and whether the first update is fast which are understudied but are integral to funders' behavior. Our results show the importance of number of updates, which justify the need of continuous research on entrepreneurs' preparedness through ongoing communication.

Third, we add to the literature by applying the Uni-model of persuasion theory in the study of reward-based crowdfunding success. The extant research based on persuasion theory dominantly used dual-process ELM to examine different impacts of central route information and peripheral route information (Zheng et al. 2016, Allison et al. 2017, Xiang et al. 2019). Nevertheless, most funders in reward-based crowdfunding are non-professional investors without expertise in related areas (Li et al. 2017), which makes Uni-model a more appropriate research method to understand the persuasion process than dual-process ELM. Connecting Uni-model and novel empirical evidence, our research contributes to theory building in the context of reward-based crowdfunding.

6.2 Practical implications

Our study provides practical implications for entrepreneurs and crowdfunding platforms in the following three aspects. First, our study shows that entrepreneurs need to post popular introductory videos when they launch their projects. Based on our findings, the number of views of introductory videos helps secure the funding. Therefore, entrepreneurs need to put more time and efforts to provide detailed information that potential funders are interested in such as how the project is originally planned, what have been achieved and what needs to be accomplished, etc. In addition, they need to take the promotion of the videos into consideration.

As for crowdfunding platform managers, they can highlight top popular videos every day. In addition, they might consider how to help entrepreneurs prepare their introductory videos. For example, they can give tips on video making, share links of prior popular videos, and introduce new tools of video making on Internet.

Second, our results show that it will be beneficial for crowdfunding creators to incorporate color images of key items of in their project presentation as a success driver. A corresponding recommendation is that entrepreneurs might consider adding color images of WishList items and

displaying them more clearly on the project webpage. This can be an effective way to engage potential funders and motivate contribution. In addition, listing critical items such as WishList items helps funders better evaluate the project and verify the target funding needed. For the crowdfunding platform managers, they may consider providing guidelines of image design to help crowdfunding creators better present their projects.

Third, for entrepreneurs who make use of reward-based crowdfunding our study shows that posting follow-up updates has significant impact on crowdfunding success. This finding implies that ongoing communication presents entrepreneurs' preparedness and shows their active attitude, which helps attract potential funders and justify the funding target. A corresponding recommendation stemming from this evidence is that project creators can highlight the important updates posted on the project webpage. As for the crowdfunding platform managers, we suggest that they make the projects more engaging by providing links to popular updates on their homepage.

7. Conclusion

Crowdfunding has emerged as a widely adopted option for entrepreneurs to finance their early-stage projects. While launching a crowdfunding project is relatively simple, reaching the funding target is not easy. Although this challenge motivates researchers to identify multiple key drivers of successful projects, the mechanism of crowdfunding success is still not well understood. Prior research suggests that entrepreneurs' preparedness is essential to obtain funding for new ventures (Chen et al. 2009, Cardon et al. 2017). Nevertheless, there is little empirical research on this critical factor in the crowdfunding setting.

To gain insights into how crowdfunding creators' preparedness come into play in reward-based crowdfunding success, we test our proposed hypotheses based on a unique dataset of 205 crowdfunding projects of independent movies. Our findings show that entrepreneurs' preparedness reflected in project presentation has a significant effect on crowdfunding success. In addition, entrepreneurs' updates positively influence crowdfunding performance, but the speed of posting the first update does not. The results from our empirical analysis are consistent with most of our hypotheses. While we focus on the industry of independent movies, our findings can be applied to other categories of reward-based crowdfunding.

Our research is not without limitations. First, our data collection is limited to the information accessible from the crowdfunding platform. For example, some funders remain anonymous, and we cannot observe how much they contributed. Second, we have different online video websites (YouTube and Vimeo) and social networks (Facebook and Instagram). While there might be slight difference among them, we believe such difference is insignificant for our analysis. Third, we haven't discussed that entrepreneurs should not exaggerate their preparedness (Cottle and Anderson 2020). Finally, we collected data from Seed and Spark for five months in 2020 to study constructs of crowdfunding creators' preparedness.

Future research can be extended in the following aspects. First, we have only studied one platform (Seed and Spark). Crowdfunding creators might behave differently on relatively larger platforms such as Indiegogo or GoFundme. Therefore, more empirical research can be done to examine the impact of preparedness on other platforms. Second, future research can explore other important factors of crowdfunding creators' preparedness using controlled experiment. Third, researchers can study entrepreneurs' sequential crowdfunding behavior. For example, what is the difference

between their previous strategy and current strategy of preparedness? Lastly, future studies can explore the impact of COVID-19 pandemic on both entrepreneurs and backers.

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To Scale up or Fine tuning? An exploratory literature review on Customer knowledge management scalability strategy

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ABSTRACT

The conceptual effort presented in this paper emphasizes the importance of "context" to analyze more in detail the influence of knowledge and communication on the formation of individual and collective interpretive schemes underlying innovative processes. Exploratory, the main aim of this study is to critically identify and exploit the relationship among scale-up strategy and innovation performance by assuming the lens of customer knowledge management. The study carried out a exploratory literature review of peer-reviewed articles between 2002 and 2018. Based on a total of 131 identified studies, the morphology of the analysis has been articulated among three main dimensions that intersect the management literature domains associated to the key search terms: a) organizational and transactional aspects; b) data driven innovation; c) customer-oriented service economy. For the company scale up, this implies to building and managing humans and organization with different knowledge cultures. This means to have different socio-educational background, different scripts and different track-record, as well. As we have emphasized, empirically the analysis of the selected papers has led to better understand the relationship between

firm scalability, data-driven technology and customer driven innovation management. Results have provided insights about empirical works highlighting tensions and organizational learning path emerging during process of expansion. The review provides practitioners with better knowledge on organizational patterns toward growth and innovation clarifying constraints and trade-offs emerging along exploitation and exploration, including effects (negative/positive) on performances. Such a body of knowledge can also inform the research community about commonly reported (or unaddressed) challenges and direct provision of solutions to support technological firms' paths of growth. The main limitation is related to the literature review and the clustering using only the data from Web of Science. For the future, we can opt for different methodology (i.e. inferential, multiple regression etc.) as well as test the relationship under a different conceptual lens. Since conclusions, managerial and practical implications are presented in order to highlight the original and novel evidences of this study.

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