

Investigating the Antecedents to the Adoption of Social Customer Relationship Management Technologies by Start-up Companies

Abstract

Despite their fairly recent emergence, start-up companies now play an important role in the economic development of countries around the globe. These companies have fewer tangible assets and capital, and therefore, the efficient delivery of services and products is a key business priority for them. Customer Relationship Management (CRM) technologies, which are designed to facilitate customer engagement during the design, development and delivery of services and products may play a significant role in the success or failure of start-up companies. Developments in new communication technologies have transformed traditional CRM into Electronic CRM (eCRM), Mobile CRM (mCRM); and more recently, Social CRM (SCRM). However, there remains very little understanding of the factors affecting SCRM adoption in start-up businesses. The relative newness of SCRM technologies, coupled with the swiftly evolving nature of start-up companies: which has made them difficult cases to study – has limited the amount of research undertaken in this area. This paper aims to close this gap by proposing a framework that depicts the factors affecting start-up companies' intention to adopt SCRM applications, and explores the relative importance of these factors. Inspired by an extended Technological, Organisational and Environmental (TOE) framework, this paper investigates effects of Technological Characteristics (TC), Organisational Characteristics (OC), Environmental Characteristics (EC) and Managerial Characteristics (MC) on start-up companies' intentions to adopt SCRM applications.

The results outlined in this research indicate that the observability, compatibility and trialability of SCRM solutions positively affect SCRM adoption in start-up businesses. Moreover, the availability of internal financial resources has a similarly positive effect. When considering environmental characteristics, it was found that support from venture capitalists, crowdfunding support, governmental support, business angels support and external pressure all positively affect the intention to adopt SCRM applications within start-up businesses.

Keywords: Social Customer Relationship Management; SCRM Adoption; DOI; Start-up Business

1. Introduction

The concept of Customer Relationship Management (CRM) first emerged in the mid 1990s, building on the work of Relationship Marketing (RM) to describe the connections between firms and their customers, and to promote commitment and loyalty from those customers (Lee et al., 2014). CRM is broad in its scope, covering all activities that involve engaging with customers, ranging from sales, marketing and support at the front end; to finance, production, R&D and human resources at the back end (Assimakopoulos et al., 2015). Given this wide focus, CRM-related technologies are arguably among the most important services that assist in companies' businesses (Coyle et al., 2013). Adam Lewites described customer management as a tedious and cumbersome process without CRM

42 technologies (Insightpool, 2015). CRM has evolved through several generations, including
43 traditional CRM, electronic CRM (eCRM), mobile CRM (mCRM) and most recently, Social
44 CRM (SCRM) (Awasthi & Sangle, 2012).

45 Electronic CRM (eCRM) combines hardware, software, processes and applications, along
46 with a wider management commitment to utilise the Internet and increase both the scale and
47 scope of customer services (Yu, Nguyen, Han, Chen, & Li, 2015), with Internet and web-
48 based services providing new opportunities for businesses to deliver a variety of CRM
49 functions (Reid & Catterall, 2015). Electronic CRM (eCRM) also uses e-mail, the Internet
50 and web-enabled call centres to improve customer acquisition and retention (Javadi &
51 Azmoon, 2011). Mobile CRM (mCRM) deploys mobile platforms to manage relations with
52 its customers, allowing companies to develop dialogues with their customers using cell
53 phones (Kim et al., 2015). MCRM is a technological tool designed to reduce costs and
54 increase the efficiency of communication between sellers and buyers, who are relying more
55 and more on their mobile phones to complete day-to-day activities (San-Martín et al., 2016).

56 The rise of social networking platforms has significantly changed relationships between
57 companies and their customers (Harrigan et al., 2015). The pervasive use of social media
58 platforms such as Facebook, Twitter, YouTube, Instagram, Snapchat, and Tumblr, amongst
59 others, has brought both new opportunities and challenges for those seeking to manage their
60 relationships with customers, and has subsequently led to the development of a new branch of
61 CRM: social CRM (SCRM) (Malthouse et al., 2013). The concept of SCRM first emerged in
62 2007 as part of the utilisation of Web2 tools, to add collaborative elements to existing
63 customer relationship management services (Greenberg, 2010). Greenberg described SCRM
64 as both a philosophy and a business strategy, supported by Web 2.0 technologies, business
65 rules, processes and social characteristics, which together are designed to engage customers
66 in a collaborative conversation and provide mutually beneficial values (Greenberg, 2010).

67 SCRM functionalities can be described as creating customer communities, monitoring
68 customers, sharing customer contacts, and reviewing community feedback (Schultz et al.,
69 2012). SCRM applications can be divided into sales applications, which are usually used
70 internally; customer service and marketing applications, which are used both internally and
71 externally; and social e-commerce applications, which are most often used externally
72 (Gartner et al., 2011).

73 Askool & Nakata, (2011) propose that factors including familiarity, caring behaviour, sharing
74 information and trustworthiness all affect the cognitive view of managers in regard to the
75 adoption of SCRM technologies. Alt & Reinhold, (2012) found that SCRM adoption
76 increases a company's marketing performance, while Trainor et al., (2014) identified that the
77 creation and subsequent adoption of SCRM technologies are positively affecting customer
78 relationship performance. Malthouse et al., (2013), and Buzzetto-More, (2013) have all
79 reported that SCRM technologies offer many new opportunities for acquiring, retaining and
80 terminating customer relationships. Choudhuryab & Harrigan, 2014 have taken this further
81 and developed a theoretical model for the incorporation of social networking technologies
82 into existing CRM solutions. Parveen & Ismawati, 2015 reported the positive impact that
83 adopting SCRM can have in managing customer relations and customer service activities. Dr
84 Laura Kozloski Hart, Chief Operating Officer (COO) of My Community Alert, has asserted
85 that it is close to impossible to achieve efficient customer management, sales and marketing
86 services without a proper CRM, and has suggested SCRM solutions as the most cost-effective
87 type of CRM technology (MCAAlert, 2015). Furthermore, it is likely that social networking
88 technologies could play an even more important role in start-up companies (Ghezzi et al.,
89 2016). A key reason for the failure of start-up companies is high expenditure on the recruiting
90 of expensive marketing, sales, and customer management teams, rather than using the
91 cheaper (or even free) solutions offered by SCRM (Koster & Stel, 2014). Start-up companies

92 often have very limited advertising, marketing and customer service budgets (Ruokolainen &
93 Aarikka-Stenroos, 2016), and therefore efficiency in the adoption of any new technologies,
94 including SCRM is a significant advantage (Hyytinen et al., 2015).

95 By identifying the factors that affect SCRM adoption would assist in the efficient utilisation
96 of social networking technologies, and may play a vital role in the subsequent success of
97 start-up companies. The relative newness of SCRM technologies, coupled with the evolving
98 nature of start-up companies (Woodside et al., 2016) (which has traditionally made them
99 difficult cases to study) has resulted in very limited research on factors affecting SCRM
100 adoption within start-up businesses. This paper is seeking to fill this gap by identifying the
101 factors that affect SCRM adoption in start-up companies. When considering the similarities
102 between eCRM, mCRM and SCRM technologies (Alt & Reinhold, 2012), such as utilising
103 the Internet as a communication platform, and the central role of the customer in the adoption
104 and use of these technologies; it could be perceived that factors affecting the adoption of
105 eCRM and mCRM may have a similar influence on SCRM adoption; although it is worth
106 noting that SCRM investigation and practises are still in their very early stages (Trainor et al.,
107 2014). This paper applies the Technology, Organisation and Environment (TOE) model to
108 manage the relationship between start-up companies and their customers in a social
109 networking context. More precisely, the effects of technological, environmental,
110 organisational and managerial variables on the adoption of SCRM technologies by start-up
111 companies are analysed. This paper contributes to the literature by adopting the original
112 theoretical perspective of the TOE model in order to understand how technological
113 competence, environmental supports and limitations, organisational structure and managerial
114 characteristics affect intentions to adopt SCRM technologies in start-up companies.

115 The rest of this paper is organised as follows. In the next section, the conceptual framework
116 and research hypotheses are discussed in detail, followed by a discussion of, the research

117 method adopted, including an explanation of the research design and scale. Data analysis and
118 results are presented in Section Four of this paper, followed by a discussion of implications of
119 this study in Sections Five and Six. Finally, the possible limitations of the research are
120 explored, and the possibility for future work is suggested.

121 **2. Conceptual Framework and the Development of a Hypothesis**

122 The majority of the literature on the adoption of technology is based on the Diffusion of
123 Innovation (DOI) theory, the Technology Acceptance Model (TAM), and the Technological,
124 Organisational and Environmental (TOE) framework. DOI theory, which also known as the
125 Innovation Diffusion Theory (IDT) is mainly utilised to explain how, why, and in what rate
126 new ideas and technologies are adopted by different people and organisations (Rogers, 2003).
127 TAM (Davis et al., 1989) is based on the Theory of Reasoned Action (TRA) (Fishbein &
128 Ajzen, 1977), and seeks to identify and explain the factors that affect individuals' behaviour
129 in regard to accepting or rejecting new technologies. The TOE framework links the adoption
130 of new technologies to the technological, organisational and environmental characteristics of
131 a company (Tornatzky & Fleischer, (1990), Thong & Yap, (1995) extended the TOE
132 framework by adding managerial characteristics as a new factor, describing the impact of
133 manager attitude, perception and experience on the adoption of new technology. These
134 various frameworks and theories offer a basis from which to investigate factors affecting
135 SCRM adoption in start-up businesses.

136 In this research, the TOE framework has been selected to provide the basis for modelling the
137 adoption of SCRM technologies. In addition, a number of elements from the Diffusion of
138 Innovation (DOI) and Technology Acceptance Model (TAM) have been utilised.

139 As shown in Figure 1, the framework adopted in this study categorised the factors that
140 influence SCRM adoption into four characteristics: Technological Characteristics (TC),
141 Organisational Characteristics (OC), Environmental Characteristics (EC), and Managerial

142 Characteristics (MC). Each of these characteristics includes different constructs that may
143 affect companies' decisions on the adoption of new technologies (Aboelmaged, 2014). From
144 the DOI theory, three constructs are included in the discussion of technological
145 characteristics: compatibility, observability, and trialability. Perceived advantage, which is
146 the fourth construct contained in the technological characteristic is adopted from TAM and
147 DOI theories. Organisational characteristics constructs include consideration of internal
148 financial resources and business incubation. The financial resources construct is based on the
149 TOE framework, while the business incubation is newly developed for this research.
150 Environmental characteristics includes consideration of external pressures and governmental
151 support constructs, which are adopted from TOE framework; as well as business angel
152 support, venture capitalist support, and crowd funding support; all of which are again newly
153 designed constructs. Finally, the managerial characteristics component contains manager
154 innovativeness and manager attitude constructs, both of which have been adopted from the
155 extended TOE framework. In total, this research framework consists of thirteen constructs
156 within four characteristics that build the four main hypotheses of this research.

157 **2.1 Technological Characteristic Constructs**

158 Technological characteristics play a crucial role in the adoption of any new
159 technologies (San-Martína et al., 2016). Many studies have reported the importance of
160 technological orientation in the adoption of eCRM and mCRM (Verma & Verma, 2013)
161 technologies. The perceived advantages of a technology by potential adopters, its
162 compatibility with existing business practises, the observability of the technology, and
163 trialability of the new product or service have each been reported as important factors
164 affecting the adoption of new technologies Ghobakhloo et al., (2014), and therefore are
165 included as constructs in the technological characteristics element of this study.

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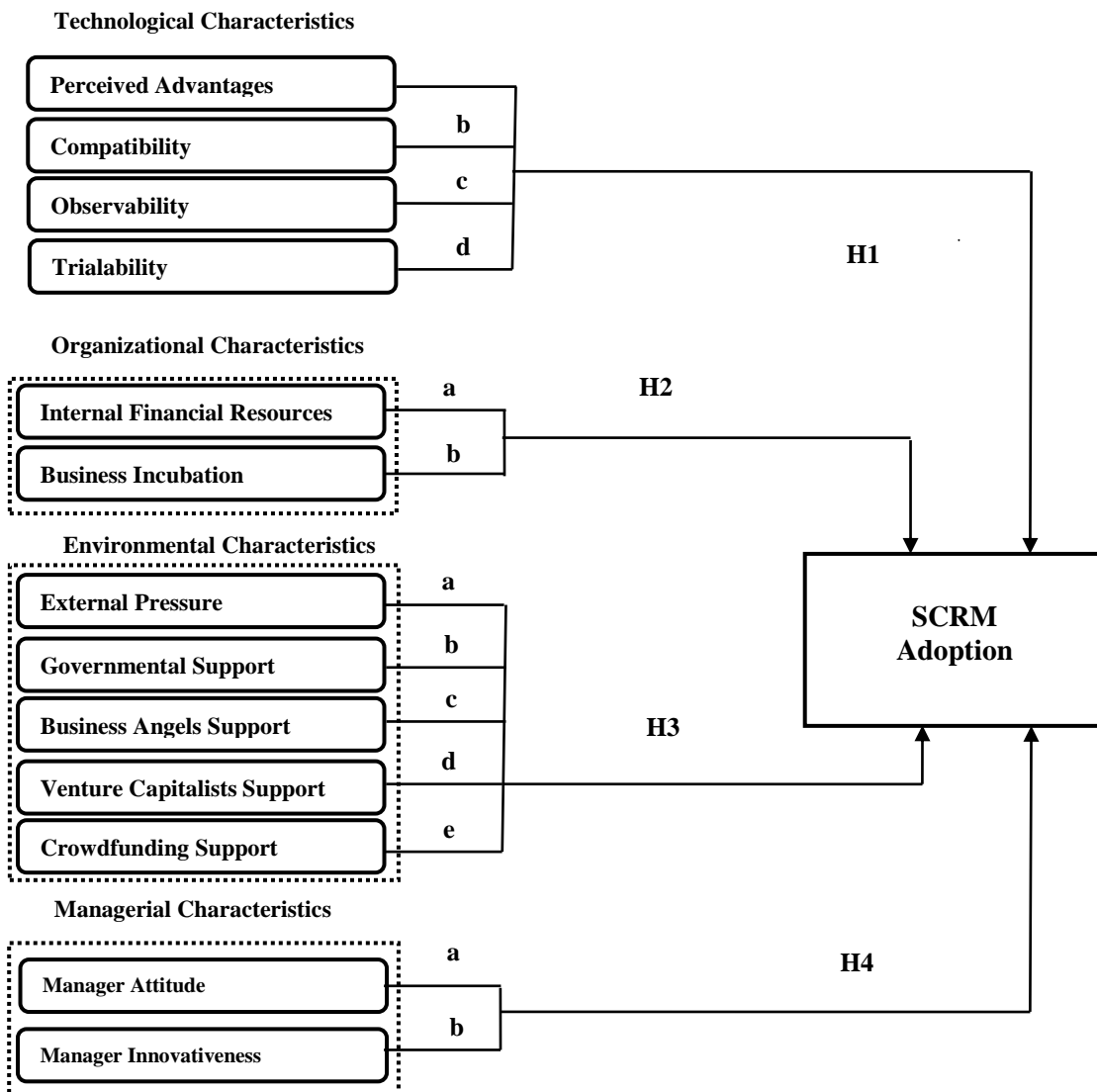


Fig.1. Proposed SCRM Adoption Model

2.2 Perceived Advantage

Perceived advantage can be described as a characteristic that makes a product or service better than others in the eyes of potential customers (Rogers, 2003). Companies may gain an advantage by creating more useful technologies or developing technologies which save customers time or money. Many researchers have reported the positive impact of perceived advantage on the adoption of new technologies (Ramayah et al., 2016). Li et al., (2008) reported that in all cases, the negative perception of a specific technology significantly reduces its adoption. It is vital for small companies to increase their perceived relative

199 advantage in order to gain higher values in the market. New technologies may increase the
200 efficiency of customer services and optimise companies' operations (Wen & Chen, 2010).
201 The perceived advantages of e-technologies provided through the Internet, including e-
202 procurement and real-time electronic communications *inter alia* have significantly affected
203 the adoption of eCRM platforms (Milovi, 2012). The advantages offered by mobile
204 platforms, including text messaging, an interactive voice response, mobile broadcast
205 advertising and mobile telemarketing have positively influenced mCRM adoption in different
206 companies (Maduku et al., 2016). Advantages of social networking technologies, such as the
207 low or no cost of adoption (Braojos-Gomez et al., 2015) offer companies the opportunity to
208 manage their relationship with customers with little to no cost (Trainor et al., 2014).
209 Moreover SCRM technologies allow companies to increase their business value (Aral et al.,
210 2013) and improve their access to new markets and clients. Therefore, it can be hypothesised
211 that the perceived advantages of SCRM technologies may affect their adoption in start-up
212 businesses as follows:

213 **H1a.** That the perceived relative advantages of SCRM technologies are positively related to
214 the adoption of SCRM applications in start-up companies.

215 **2.3 Compatibility**

216 Compatibility is used to describe the degree to which a new technology or innovation is
217 consistent with the current technologies and needs of a company (Rogers, 2003).
218 Compatibility is an important factor in determining the adoption of a specific technology
219 (Sophonthummapharn, 2009). The use of any new technology is likely to engender
220 significant changes to existing business processes, and as such, those technologies which are
221 more compatible with the existing technological context of a company tend to have a higher
222 chance of adoption (Gupta et al., 2013). An innovation is accepted more easily if it is

223 compatible with a company's prevailing values, infrastructure, and technologies (Ghobakhloo
224 et al., 2014).

225 Many researchers have reported the compatibility of new eCRM solutions with existing
226 company technologies, such as IT (Chebrolu & Ness, 2012), Internet communications (Awa
227 et al., 2015), and cloud computing (Géczy et al., 2012); as an important element in the
228 adoption process (Gangwar et al., 2015). The compatibility of new mobile technologies with
229 existing policies, procedures and infrastructure also plays a significant role in mCRM
230 adoption (Hossain & Quaddus, 2011). It is especially important in start-up companies that
231 any changes in infrastructure, services or technologies are compatible with existing beliefs
232 and values (Boumediene et al, 2013). An important determinant in the widespread adoption
233 and utilisation of social networking platforms is their compatibility with existing IT
234 technologies, and their ease use, with little learning required (Guesalaga, 2016). The easy
235 accessibility of social networking applications, through web-browsers and mobile devices has
236 made them easily compatible with existing technologies in many companies (Sinclair &
237 Vogus, 2011). Therefore, following hypothesis can be proposed:

238 **H1b.**The compatibility of SCRM technologies with existing company technologies is
239 positively related to the adoption of SCRM applications in start-up companies.

240 **2.4 Observability**

241 Observability is the level that the existence and availability of technologies are visible to
242 others (Rogers, 2003). It has been asserted that when a technology is more visible, an
243 individual is more likely to follow the trend and utilise it (Lin & Chen, 2012). Similarly, if a
244 particular technology is widely used and is more visible, companies are more likely to follow
245 the trend and adopt the technology (Ramdani et al., 2013). Many studies report that more
246 visible IT technologies have a much higher chance of adoption (El Ouiridi et al., 2016;
247 Miranda et al., 2016). The visibility of IT and e-technologies has significantly affected eCRM

248 adoption in SMEs (Awa et al., 2015). Wu & Wang, (2009) found that 60 per cent of web-
249 based CRM software failed to achieve wider adoption simply because of their relatively
250 lower observability. Moreover, lower visibility of cloud technologies has been reported as a
251 barrier in the adoption of cloud-based e-commerce (Rahayu & Day, 2015) and e-government
252 technologies (Lin & Chen, 2012). The greater visibility of mobile technologies such as
253 modern mobile phones and popular apps has contributed to the adoption of mCRM
254 technologies in different businesses (Rodriguez & Trainor, 2016).

255 Social networking platforms provide a means to promote customer engagement in marketing
256 campaigns (Aggarwal et al., 2012), track customer feedback (Small Business Trends, 2011)
257 and reach new clients (Olbrich & Holsing, 2012). These advantages, along with the increased
258 popularity of social networking platforms such as Facebook, Twitter, YouTube, Instagram
259 and Tumblr (Chau & Xu, 2012) have promoted the greater observability of SCRM
260 technologies, and thus the following hypothesis can be proposed:

261 **H1c.** The observability of SCRM technologies is positively related to the adoption of SCRM
262 applications in start-up companies.

263 **2.5 Trialability**

264 Trialability is the term used to describe the degree to which customers are able to use a new
265 technology or product before they finalise their purchase (Alshamaila et al., 2013; Lin &
266 Chen, 2012). Every new technology comes with some degree of uncertainty that affects its
267 adoption rate (Ramdani et al., 2013). Trialability provides the opportunity for clients to
268 examine whether a given technology will work effectively in their environment (Rogers,
269 2003). Many researchers have reported trialability as an important factor in influencing the
270 adoption of new technologies. Trialability has positively affected the adoption of web
271 technologies (Hussein & Mourad, 2014), Internet banking, cloud technologies (Lin & Chen,
272 2012), and e-government schemes (Ji & Liang, 2016). Furthermore, the trialability of eCRM

273 software and tools has been reported as an important factor affecting adoption
274 (Sophonthummapharn, 2009). However, others have reported a negative or insignificant
275 relationship between trialability and the intention to adopt a new technology (Wang, 2014).

276 The majority of social networking platforms can be tried free of charge without restriction
277 (Ngai et al., 2015). Marketing teams are known to spend a significant amount of their time
278 evaluating the different features of various social networking platforms in the attempt to
279 recruit and retain customers, with many firms extensively testing SCRM solutions before
280 formally adopting them into their day-to-day CRM operations (Goh et al., 2012). Taking into
281 consideration the contradictory results reported in the literature on the relationship between
282 the trialability and adoption of new technologies, the following hypothesis is proposed:

283 **H1d.** The trialability of SCRM technologies is positively related to the adoption of SCRM
284 applications in start-up companies.

285 **2.6 Organisational Characteristic Constructs**

286 Organisational characteristics refer to an organisation's demographic features, such as its
287 size, financial revenue, technological expertise and location (Jeon et al., 2006). The
288 organisational characteristics of start-up companies may include their decision to adopt new
289 technologies, including SCRM solutions. There are two key constructs of organisational
290 characteristics discussed in this section: internal financial resources and business incubation.

291 **2.6.1 Internal Financial Resources**

292 Adopting and maintaining any new technology requires some financial investment, as
293 the technology is likely to require installation, training, enhancement and customisation (Kim
294 et al., 2015). Companies with more greater internal financial resources are therefore more
295 likely to adopt new technologies (Ghobakhloo et al., 2014). Conversely, the limited capital
296 that is a common feature in small companies is a barrier to adopting new technologies (Tan et
297 al., 2009). Having sufficient capital minimises financial risk during the adoption and

298 implementation of new technologies in start-up businesses (Sila, 2013), as illustrated by the
299 finding that access to financial resources played a significant role in the adoption of eCRM
300 applications among Internet service providers, Electronic Data Interchange (EDI) businesses
301 and business-to-business e-commerce companies (Kurnia et al., 2015). Furthermore, the
302 ready availability of financial resources was reported as an important factor in the adoption of
303 mobile marketing and mCRM solutions in South-African companies (Maduku et al., 2016).

304 However, whilst social networking platforms and SCRM solutions are very cost-
305 effective and relatively easy to adopt, their adoption is not without costs (Kirtiş & Karahan,
306 2011). Start-up companies need to spend time and money to customise their chosen SCRM
307 solution to meet their own needs and to train their staff to work effectively with the SCRM
308 system (Harrigan et al., 2015). Consequently, the following hypothesis is proposed:

309 **H2a.** The availability of internal financial resources is positively related to the adoption of
310 SCRM applications in start-up companies.

311 **2.6.2 Business Incubation**

312 Business incubators combine the necessary personnel, space and business processes to
313 support the formation and development of new companies (Ratinho et al., 2013).

314 Whilst start-up and small businesses play a significant role in generating countries' economic
315 growth, the failure rate of these companies is very high, particularly in the early stages
316 (Moroni et al., 2015). Many governments have tried to support start-up entrepreneurs through
317 the development of business incubators (also known as technology or science parks), to
318 reduce this failure rate (Wonglimpiyarat, 2016). Traditionally, business incubators provided
319 businesses with physical premises and support for their administrative functions, however in
320 more recent times it is possible to see business incubators providing marketing, customer
321 management and even knowledge transfer services (Wonglimpiyarat, 2016). The wide range
322 of support that business incubators can provide may significantly contribute to the viability

323 and growth of start-up businesses and their intention to adopt new technologies (Voisey et al.,
324 2006). Lilai, (2010) found that incubation had a positive effect on the number of Chinese
325 start-up companies utilising new technologies. Similarly, Wonglimpiyarat, (2016) has
326 reported the positive impact of business incubation in encouraging start-up businesses to
327 adopt new technologies in Thailand.

328 The radical changes that social media has imposed on the business environment has caused
329 many start-up companies to struggle with the timely adoption of new social networking
330 solutions (Aral et al., 2013), and in this area, business incubators have once again positively
331 affected the adoption of new electronic and mobile marketing technologies in start-up
332 businesses (Wonglimpiyarat, 2016). Consequently, the following hypothesis is proposed in
333 this research:

334 **H2b.** The availability of business incubation is positively related to the adoption of SCRM
335 applications in start-up companies.

336 **2.7 Environmental Characteristic Constructs**

337 Environmental characteristics largely refer to the external factors that may limit or support a
338 company's activities (Voges & Pulakanam, 2011). Many researchers have demonstrated the
339 effects that environmental variables can have on the adoption of new technologies in different
340 businesses and sectors (Abou-Shouk et al., 2016). In this study, the effects of four
341 environmental constructs on the adoption of SCRM technologies are investigated: external
342 pressure, governmental support, business angels' support, venture capitalist support and
343 crowd funding support.

344 **2.7.1 External Pressure**

345 Three distinct external pressures are detectable in any company: competitive pressure,
346 customer pressure and industry pressure (Sophonthummapharn, 2009). Competitive pressure
347 describes the level of competition that a company feels when competing with other similar

348 companies (Sin et al., 2016). Customer pressure refers to those customer demands and
349 behaviours that make companies adopt new technologies; while industry pressure refers to
350 the trends and operational directions that occur in a specific business or industry, and which
351 prompt the company to adopt new technologies or establish new relationships in order to
352 maintain their competitive advantage or simply to survive (Wang & Lai, 2014). External
353 pressures can push companies to adopt new technologies even without a full understanding of
354 their benefits (Lin, 2014). For example, external pressures have made manufacturing
355 companies adopt new ISO (International Organisation for Standardization) standards (Ueki,
356 2016); motivated companies to adopt green technologies (Ji & Yang, 2014) and made SMEs
357 adopt e-commerce procedures (Sin et al., 2016) and e-supply chain (Lin, 2014) solutions.
358 External pressures have increased the adoption of eCRM adoption in the travel industry
359 (Gualandris & Kalchschmidt, 2014), SMEs in developing countries (Abou-Shouk et al.,
360 2016) and encouraged service sector companies to build websites to manage their customer
361 relations and e-commerce services (Almoawi, 2011). External pressures is proposed as being
362 an important factor in influencing companies' decisions regarding whether to adopt mCRM
363 solutions (Zheng, 2011). For example, in the travel industry, the presence of external
364 pressures has made many hotels adopt mCRM and mobile reservation systems (Wang et al.,
365 2016).

366 The emergence of social networking platforms has moved external pressures from
367 customers to a new level (Nugroho, 2015), and it is now common for companies to use social
368 networking platforms to acquire new markets or retain existing customers and it is not
369 unusual for organisations to lose customers as a consequence of failing to provide a timely
370 response to individuals' comments on social networking pages (Goh et al., 2012). The
371 industry pressure caused by the wider deployment of SCRM solutions (Kane et al., 2014),
372 coupled with the customer pressure arising from client expectations that companies adopt

373 social networking platforms (Braojos-Gomez et al., 2015), and the competitive pressure of
374 other SCRM adopters (Wagner & Wagner, 2013) may compel start-up companies to adopt
375 and utilise new SCRM technologies; as outlined in the following hypothesis:

376 **H3a.** Existing external pressures are positively related to the adoption of SCRM applications
377 in start-up companies.

378 **2.7.2 Governmental Support**

379 Government support refers to the policies, jurisdictions, initiatives and agencies that
380 are established by governments in order to support the adoption of new technologies or
381 innovations (Gibbs & Kraemer, 2004). In Central and Eastern Europe countries at the start of
382 the new millennium, government funds played an important role in the privatisation of
383 businesses. South Korean government funds for establishing e-businesses had the effect of
384 significantly increasing the adoption of e-services in South Korea (Jeon et al., 2006).
385 Similarly, a support plan devised by the Iranian government has greatly improved IT
386 adoption among Iranian SMEs (Fathian et al., 2008), while Malaysian government incentives
387 for ICT development have eased the IT adoption process in Malaysian SMEs (Tan, 2009),
388 and the US government has provided support to encourage small firms to adopt e-commerce
389 solutions (Syed Shah Alam et al., 2011). Likewise, support from the Indonesian has played an
390 important role in the adoption of e-commerce solutions among Indonesian SMEs (Rahayu &
391 Day, 2015). However, there have also been a number of studies that have reported no
392 significant change in the adoption of technologies despite government support. Dutta &
393 Evrard, (1999) could not detect any significant changes in IT adoption amongst SMEs in six
394 European countries, regardless of increased government support for IT adoption. In some
395 places, government support for IT adoption led to the unnecessary purchase of IT software
396 and hardware products among SMEs (Yap et al., 1994). There is some evidence that social
397 networks have already affected the relationship between people and governments (Kim et al.,

398 2015). Government support for social media platforms has not only influenced people's
399 perceptions, but may also encourage or discourage businesses to utilise social networking
400 technologies (Park et al., 2015). Previous studies have shown the effect of government
401 policies and regulations on the utilisation of social networking among businesses (Kim et al.,
402 2013). In Malaysia, Thailand and the Philippines, governmental encouragement to employ
403 social networking technologies has significantly increased the adoption of SCRM and other
404 social networking related technologies in those countries (Parveen & Noor Ismawati, 2015).
405 The possible contradictory effects of government support for the adoption of new
406 technologies has motivated investigation of following hypothesis:

407 **H3b.** The availability of government support is positively related to the adoption of SCRM
408 applications in start-up companies.

409 **2.7.3 Business Angels Support**

410 Business angels are individuals who provide capital to start-up businesses, usually as
411 part of the second round of financing (Yaokuang et al., 2014). However, business angels do
412 not only provide financial support, but also usually give strategic advice and share their
413 business and personal networks in order to facilitate company growth (Morrissette, 2009).
414 Business angels have played a significant role in the survival and eventual growth of start-up
415 businesses by filling financial gaps, identifying and remedying companies' weaknesses and
416 leveraging further funding (Stephanie & Robinson, 2009). Previous research has identified a
417 number of different benefits arising from the support of business angels in relation to the
418 adoption of new technologies by start-up companies (Ding et al., 2015). For example,
419 Sørheim, (2005) found a significant relationship between the availability of support from
420 business angels and the adoption of new technologies in Norwegian start-up companies.
421 Similarly, Yashisa (2010) detected a positive role for business angels in increasing the growth
422 in Japanese start-ups by supporting the adoption of new technologies. Research by Maxwell

423 (2011) and others has shown that business angels positively influenced the utilisation of new
424 communication technologies among start-up companies (Maxwell et al., 2011), and increased
425 their social networking interactions with potential clients (Ding et al., 2015). Therefore, it can
426 be hypothesised that business angel support may affect start-up's decisions on adopting new
427 SCRM technologies as follows:

428 **H3c.** The availability of business angels' support is positively related to the adoption of
429 SCRM applications in start-up companies.

430 **2.7.4 Venture Capitalist Support**

431 Venture Capitalists (VCs) are companies and organisations that invest in young, high-risk
432 start-up businesses that are believed to have brilliant ideas and good management teams, in
433 the hope of making a profit as the company grows (Wonglimpiyarat, 2016). VCs provide
434 start-up companies with much-needed funds, and in return usually secure a large percentage
435 of equity, giving them control over the company (Bartkus et al., 2013). VCs usually expect a
436 high return for their investment, and have a well-defined exit strategy (Tsai et al., 2009).

437 Hamilton (2001) reported the positive effect of venture capitalists on e-commerce adoption in
438 start-up businesses, where VCs have played an important role (Keuschnigg, 2004). It appears
439 that the long term support provided by VCs strengthens the capabilities of start-up companies
440 to adopt new technologies (Marcus et al., 2013).

441 Social networks are playing an important role in connecting investors and venture capitalists
442 to start-up companies (Braojos-Gomez et al., 2015). These platforms not only match start-up
443 companies and investors based on their common interests, but also enable VCs to view
444 customer comments about a company's products and services, allowing them to make better
445 investment decisions (Olbrich & Holsing, 2012). Moreover, by observing the people who
446 follow a start-up company's social networking page, potential investors may gain an idea of
447 the company's market size and velocity (Harrigan et al., 2015).

448 VCs also require regular reports regarding the quality of customer relationships and customer
449 perceptions about a start-up company's products or services, and these can easily be provided
450 by employing SCRM solutions (Harrigan et al., 2015). Therefore, the role of VCs in the
451 adoption of SCRM applications within start-up businesses is scrutinised in the following
452 hypothesis:

453 **H3d.** The availability of venture capitalist support is positively related to the adoption of
454 SCRM applications in start-up companies.

455 **2.7.5 Crowdfunding Support**

456 Crowdfunding is a financing technique that utilises social networking applications and
457 web-platforms to raise relatively small contributions from a relatively large number of
458 individuals in order to support the development of a specific product or service, without the
459 promise of any direct monetary return (Lukkarinen et al., 2016). Individuals that contribute to
460 crowd funding schemes are usually motivated by a personal interest in a particular product or
461 service (Gleasure, 2015). Although the concept of crowdfunding is not new (e.g. the Obama
462 Presidential campaign raised \$500 million through crowd funding in 2008 (Cunningham,
463 2012) this financing method has only become popular amongst start-up companies relatively
464 recently (Rossi, 2014). Globally, the amount of crowd funded investment in start-up
465 companies reached USD \$16.2 billion in 2014 (Massolution, 2015). Unlike angel investors or
466 venture capitalists, crowdfunding allows start-up founders to generate income whilst
467 maintaining control over the company, and without losing any equity (Gerber et al., 2012).

468 Almost all crowdfunding programmes are running on Web 2.0 and social networking
469 platforms (Mollick, 2014). The further adoption of SCRM applications would allow start-up
470 businesses to integrate their financing campaigns with existing social network based
471 crowdfunding platforms, and consequently significantly increase their chances of securing
472 additional funds (Nagy et al., 2012). Furthermore, there is evidence that crowd fund

473 investors have always been supportive of the adoption of new and disruptive technologies in
474 start-up companies (Cordova et al., 2015), with crowdfunding provide further financial
475 capital for the adoption of new technology (Beaulieu et al., 2015). Many crowd fund
476 investors are willing to invest in extending the social networking capabilities of start-up
477 companies to further support a company's portfolio development and fulfil the disruptive
478 potential of the business (Lasrado & Lugmayr, 2013). Therefore, it can be hypothesised that
479 the adoption of SCRM technologies in start-up companies can be affected by the availability
480 of crowdfunding support:

481 **H3e.** The availability of crowdfunding support is positively related to the adoption of SCRM
482 applications in start-up companies.

483 **2.8 Managerial Characteristic Construct**

484 Most business decisions are made by company managers or senior executives operating at
485 different levels of the firm. The quality of managers, their personal attitudes and interests
486 may affect the performance of the company and influence decisions about adopting new
487 technologies (Hameed et al., 2012). This study seeks to investigate the effects of two
488 managerial characteristic constructs on companies' decisions to adopt SCRM applications:
489 Manager Attitude and Manager Innovativeness.

490 **2.8.1 Manager Attitude**

491 Attitude is defined as a positive or negative viewpoint about a behaviour, a fact, or other
492 factor that affects an individual's interests (Fishbein & Ajzen, 1977). Previous studies have
493 shown that a manager's attitude towards a specific technology or innovation will significantly
494 affect its chances of adoption (Tate et al., 2015). In recent years, managers' attitudes towards
495 environmentally friendly technologies has affected their adoption in SMEs (Gualandris &
496 Kalchschmidt, 2014). Similarly, decision makers' positive views about the Internet and
497 networking technologies has considerably influenced their adoption in different businesses

498 and managers' positive attitudes towards Information Technology as a whole (IT) had a
499 direct effect on the adoption of digital and computerised innovations across the world
500 (Chuang et al., 2013), and a willingness to support e-procurement (Teo et al., 2009), e-supply
501 chain (Lin, 2014), e-commerce (Rahayu & Day, 2015) and eCRM (Hung et al., 2010)
502 technologies has significantly increased their adoption. Similarly, managers' positive
503 attitudes towards mobile technologies has clearly influenced the adoption of mobile
504 marketing and mCRM solutions (Maduku et al., 2016).

505 However, despite this record of positivity, managers' attitudes towards social networking
506 technologies are mixed (Chaouali, 2016). The positive attitude of Malaysian managers
507 supported the adoption of social networking technologies in many companies across the
508 country (Parveen & Noor Ismawati, 2015). The positive attitudes of marketing managers
509 towards social networking technologies had a significant influence on their adoption in Chile
510 (Bianchi & Andrews, 2015), while enthusiasm from key account managers influenced the
511 adoption of social media in France (Lacoste, 2016). However, in Canada, human resource
512 managers voiced concerns about the adoption of social media technologies (Poba-Nzaou et
513 al., 2016); and in Pakistan, managers' contradictory views about the challenges and benefits
514 of social networking platforms (Ellahi & Bokhari, 2013) reportedly limited adoption of social
515 networking technologies. Therefore, the following hypothesis is suggested to investigate the
516 effects of managers' attitudes in the adoption of SCRM technologies in start-up businesses:

517 **H4a.** Managers' positive attitudes towards SCRM technologies is positively related to the
518 adoption of SCRM applications in start-up companies.

519 **2.8.2 Managers' Innovativeness**

520 Manager innovativeness describes a manager's willingness to adopt new technologies, bring
521 new experiences to the organisation and to develop the creative processes that benefit the
522 company and promote company performance (Thakur et al., 2016). There is no doubt that

523 there is a strong correlation between a manager's innovativeness and the adoption of new
524 technologies within companies (Ayrancı & Ayrancı, 2015). However, the nature of this
525 relationship remains highly debated (Cho et al., 2016), with many believing that manager
526 innovativeness improves the adoption of new technologies (Sophonthummapharn, 2009).
527 Manager innovativeness have positively affected adoption of e- technologies, IT technologies
528 (Potocan & Nedelko, 2013), ecommerce and eCRM technologies (Ghobakhloo & Tang,
529 2014), mobile and mCRM technologies and even social networking technologies (Luo et al.,
530 2013) within SMEs. Others, however, have reported a negative influence from the managers
531 of start-up companies managers on the adoption of new technologies (Hyytinen et al., 2015),
532 as manager innovativeness has the potential to cause uncertainty and increase a company's
533 risk profile, which in turn decreases the chance of the adoption of new technology (Brown et
534 al., 2012). Innovative managers often frequently change company procedures, and hence not
535 giving enough time for a new technology to be absorbed by the organisation (García-
536 Quevedo et al., 2014). Moreover, innovative managers are likely to establish numerous exit
537 strategies which may affect the company's ability to adopt enduring technologies such as new
538 customer relationship management solutions (DeTienne et al., 2015). The contradictory
539 nature of manager innovativeness on the adoption of new technologies warrants investigation
540 of the following hypothesis:

541 **H4b.** Manager innovativeness is positively related to the adoption of SCRM applications in
542 start-up companies.

543 **3. Research Method**

544 This section outlines the research method employed in this study, introducing the sample and
545 research design, along with scale and model development.

546 **3.1 Sample and Research Design**

547 A total of 770 start-up companies based in Malaysia were randomly selected and contacted
548 in three rounds. During the first round, an email containing a cover letter and a link to the
549 online questionnaire designed for this research was sent to all 770 companies. Weekly
550 reminder emails were then sent to companies who had not completed a questionnaire,
551 followed by regular phone calls to remind them. A total of 163 responses were received,
552 which made a response rate for this first round of 21.16%. Seventeen (17) emails were not
553 delivered, which could be due to technical issues, invalid email addresses or the
554 unavailability of companies' email service. The questionnaires in the first round were served
555 through GoogleDocs, and as a consequence only completed questionnaires could be
556 submitted, meaning there was no possibility of receiving an incomplete or improperly
557 answered questionnaire. In the second round, to increase the response rate, an email was
558 included with the questionnaire submission link that explained the importance of this research
559 and the importance of receiving feedback. This was sent to the remaining 590 companies. In
560 this round in addition to weekly reminder emails and regular phone calls, the researchers
561 visited most of these companies to remind them about the study and to discuss the possible
562 implications of the research. In round two, a further 121 responses were collected, which
563 made response rate for this stage of 20.50%. In a similar manner to the first round, the
564 questionnaires were served through GoogleDocs. In the third round of data collection, in an
565 attempt to increase the response rate, it was decided to print out hard copies of 120
566 questionnaires and distribute them in person to the start-up companies that had not responded
567 in the earlier two stages. In addition, the researcher made phone calls to each company to
568 ensure they had completed the questionnaire and arranged to visit them again to collect their
569 responses. A total of 105 responses were collected during this stage, although seven of them
570 were incomplete and therefore had to be discarded. In total, 389 usable responses were
571 collected, which was deemed sufficient to proceed to the data analysis stage.

572 Results showed (Table 1) that the majority of respondents were male (65.80%), and most of
573 them held C-level executive positions (52.96%), followed by first-level executives (24.42%),
574 and medium-level executives (22.62%). Respondents' ages ranged from under 31 years to
575 less than 60 years in an almost equal distribution (20.56% were younger than 31 years old,
576 28.27% were aged between 31 and 40, 33.69 % between 41 and 50 years old, and 17.48%
577 were aged between 51 and 60 years old). Most of the respondents were highly educated, with
578 65.06% of them holding bachelors degrees, and 22.62% masters degrees. Seven participants
579 (1.79%) had a PhD. The size of company was measured in two dimensions: the number of
580 employees and amount of capital investment. Start-up companies are usually small with very
581 few employees. The majority of companies in this study had five employees or less (51.17%),
582 followed by 20.05% that had between six and ten employees, with 18.25% having 11-20
583 employees, while only 3.08% had more than 31 employees.

584 Regarding capital investment, the majority of the companies in the sample (64.8%) had
585 invested between 51 and 150 thousand Ringgit Malaysia (RM) (with one US Dollar
586 equivalent to about 3 Ringgit Malaysia at the time of this study), while 18.25% had invested
587 less than 50 thousand RM and only 2.31% had invested more than 350 thousand RM.

588 Results showed (Table 2) that almost all respondents (95.12%) had used social networking
589 applications at some point, with most (47.58%) using social networking applications on a
590 daily basis. The majority of respondents had been using social networking applications for
591 more than two years (22.43% for between two to three years, 37.04% for three to four years,
592 and 20.54% for between four to five years). The majority of companies that participated in
593 the study (84.84%) have their own a social networking presence, while most of them
594 (34.57%) had created their social network presence within the last three to four years
595 (between 2011 and 2012). About one-fifth of companies surveyed (20.60%) had developed
596 their social network presence one to two years ago (2014-2015), while 17.57% had done so

597 two to three years ago (2013-2014). In very few companies (0.60%) was their social
598 networking presence greater than five years (created before 2010), which is not strange
599 considering the newness of social networking technologies.

600 Over half of respondents (56.30%) had not adopted any SCRM applications and were thus
601 classed as non-adopters for the purposes of this study. 170 companies, which accounted for
602 43.70% of respondents, had adopted one or more SCRM application(s). The majority of
603 adopters had adopted two SCRM applications (54.72%), while almost an equal number of
604 companies had adopted either one (21.17%) or three (24.11%) SCRM applications.

605 **3.2 Scale and Model Development**

606 Several measurement scales were employed for testing the research hypotheses. The majority
607 of questions were measured using seven-point Likert-type scales ranging from '1 = strongly
608 disagree' to '7 = strongly agree'. There were a few questions that were measured using
609 Ordinal or Nominal scales. There are four constructs in Technological Characteristic (TC):
610 perceived advantage, compatibility, observability, and trialability. Seven measurements first
611 defined by Moore & Benbasat (1991) were used to evaluate the perceived advantage
612 construct. Four items of Karahanna et al. (1999) and Moore & Benbasat, (1991) were adopted
613 to measure the compatibility construct. Four measurement items of the observability and
614 trialability constructs were adopted from Moore & Benbasat (1991). There are two constructs
615 in the Organisational Characteristic (OC) component of this research: internal financial
616 resources and business incubation. Internal financial resources was measured using seven
617 items adapted from Grandon & Pearson (2004) while business incubation was measured
618 using a seven-point Likert-type interval scale. The Environmental Characteristic (EC)
619 component contains five constructs; all measured using a seven-point Likert-type interval
620 scale. External pressure was measured using eight items derived from an extended TOE
621 framework, based on work undertaken by Grandon & Pearson (2004), Premkumar et al.

622 (1999), and Sophonthummapharn (2009). Four items of governmental support were adopted
623 from Sophonthummapharn, (2009). Three newly created constructs of environmental
624 characteristics, namely Business Angels Support, Venture Capitalist Support and Crowd
625 Funding Support were measured using four items of a Likert-type interval scale. Two
626 constructs of managerial characteristics, namely manager attitude and manager
627 innovativeness were measured by four Likert-type items adopted from Harrison et al. (1997),
628 and Thong & Yap (1995). Four questions were developed to detect if a firm had adopted any
629 SCRM applications or if it intended to adopt SCRM in the future, based on Carter &
630 Belanger (2005), Elliot et al. (2007) and Zhu et al. (2010). Reliability of the constructs was
631 assessed by computing the coefficient scores for Cronbach's alpha. Table 3 shows both alpha
632 values and means and standard deviations. The alpha values range from 0.79 to 0.93, which is
633 considered high and above the recommended value of 0.70 (Nunnally & Bernstein, 1994). As
634 shown in Table 4, the correlation between variables ranged between 0.2 to 0.7, making them
635 suitable for inclusion in the structural equation model of this study.

636

Table 4: Variable correlations and significance levels

	SCRMAD	COMP	PADV	OBSRV	EXTP	GOVRN	BUSNG	VENCA	INTRF	BUSUB	CROWF	TRALA	ATDU	INOVA
SCRM	1.000													
Adoption														
Compatibility	.601**	1.000												
Perceived	.457**	.567**	1.000											
Advantage														
Observability	.384**	.556**	.565**	1.000										
External	.510**	.629**	.552**	.501**	1.000									
Pressure														
Governmental	.471**	.599**	.504**	.553**	.563**	1.000								
Support														
Business	.500**	.575**	.519**	.534**	.548**	.564**	1.000							
Angel Support														
Venture	.411**	.529**	.392**	.320**	.335**	.279**	.396**	1.000						
Capitalist														
Support														
Internal	.540**	.656**	.624**	.634**	.609**	.643**	.626**	.414**	1.000					
Financial														
Support														
Business	.512**	.637**	.503**	.449**	.579**	.550**	.644**	.391**	.641**	1.000				
Incubation														
Support														
Crowdfunding	.430**	.531**	.479**	.416**	.471**	.410**	.403**	.402**	.489**	.488**	1.000			
Support														
Trialability	.426**	.546**	.450**	.506**	.549**	.489**	.524**	.324**	.597**	.515**	.434**	1.000		
Manager	.276**	.457**	.291**	.296**	.385**	.362**	.361**	.343**	.428**	.485**	.328**	.327**	1.000	
Attitude														
Manager	.286**	.487**	.403**	.420**	.443**	.470**	.486**	.276**	.485**	.536**	.314**	.378**	.691**	1.000
Innovativeness														

637 ** Sig. at p<.01

638

639 **4. Analysis and Results**

640

641 In this paper, Structural Equation Modelling (SEM) is applied for confirmatory factor
642 analysis using AMOS (Analysis Moment of Structures Software), to explore the relationship
643 between the independent and dependent variables. The measurement model defines
644 relationships between research constructs and items /questions contained in the questionnaire.
645 To provide a proper measurement of the research constructs, the questions relevant to each
646 construct should evaluate different aspects of the dependent variable, while they should not
647 be too similar. A pure measurement model represents a Confirmatory Factor Analysis (CFA)
648 with an undetermined covariance among all possible pair of variables. Such a model is also
649 called a null model as the covariance matrix values for all pairs of variables are zero since it
650 is assumed that the research constructs are totally independent of each other. However, any
651 relations between hypothesised constructs must be different to the null model in order to be
652 considered significant. Absolute fit indices include Chi-square (χ^2), Goodness-of-Fit Index
653 (GFI), and Root Mean Square Error of Approximation (RMSEA). The Chi-square reflects the
654 discrepancies between implied variance and covariance (Σ) and empirical sample variance
655 and covariance (S). If the probability (P) value is more than 0.05, then any discrepancies
656 between Σ and S would be small. Although Chi-square is the most fundamental measure of
657 overall fit, it has been criticised for being too sensitive to cases with a sample size of more
658 than 200 (Hair et al., 2010). Therefore, it should be used along with other indices in order to
659 evaluate the overall fit of a model. Goodness of Fit Index (GFI) reflects the relative variance
660 or covariance of a model. The GFI is calculated by comparing the discrepancy value of the
661 proposed model with a saturated version of the model with 100% fit. RMSEA assists in
662 correcting errors of Chi-square by accounting population approximation errors. Some
663 researchers have suggested that RMSEA should be less than 0.05 Holmes-Smith, (2012),
664 while others have accepted 1.0 as a reasonable value (MacCallum & Browne, 1993).

665 However, generally, any value ranging from 0.05 to 0.08 is viewed as acceptable (Hair et al.,
666 2010). The CFA results indicated significant Chi-square while other fit indices such as GFI
667 (0.805) was marginally lower than the cut-off point (≥ 0.90). However, the standardised
668 regression weights for all items were above 0.7. Fornell & Larcker, (1982), and tests for
669 discriminant validity were acceptable, as all factors loading found significant ($p < .01$) and
670 composite reliabilities exceeded the .60 benchmark (Bagozzi & Yi, 1988). Moreover, the
671 CFA results indicated RMSEA coefficient of the proposed model at 0.41 which indicates a
672 satisfactory model fit (values below .50 are considered good fit Steiger, (2007).

673 The detected Chi-square is not significant, but such value of a Chi-square is not unusual in
674 studies with large samples (Bentler & Bonett, 1980). A statistic index that minimises the
675 effects of sample size on the model Chi-square is X^2/DF (Chi-square divided by the degree
676 of freedom) (Wheaton et al., 1977). Values of lesser than 3 for X^2/DF reflects a reasonable fit
677 (Kline, 2010). Therefore, the value of 1.65 as achieved in this study is another indication of
678 the fitness of the research model. Values above 0.90 for GFI (.805), IFI (.935), TLI (.928)
679 and CFI (.934) coefficients indicate the proposed model fit (Byrne, 2010). As suggested by
680 Sharma et al. (2005), the GFI index should not be seriously considered as it is a very sensitive
681 index and its usage has become less popular in recent years. Moreover, the reported PCFI
682 (Parsimony Comparative Fit Index) of more than 0.50 (.854) reflects a good fit for this
683 research model (Mulaik et al., 1989).

684 Construct validity can be examined by assessing convergent validity and discriminant
685 validity. Average Variance Extracted (AVE) and Construct Reliability (CR) estimation are
686 factors for assessing convergent validity (Hair et al., 2010). In this research, AVE was more
687 than 0.5, and CR was greater than 0.7. Moreover, the critical ratios (t-values) were higher
688 than 1.96 ($p < 0.001$) as shown in Table 5. Discriminant validity reflects the level of
689 distinction between different latent constructs Hair et al., (2010), which appears when shared

690 variance between a construct and any other construct is lesser than shared variance between
 691 the construct and its indicators (Fornell & Larcker, 1982). If the AVE estimate of a construct
 692 is consistently larger than the Squared Interconstruct Correlation (SIC) estimate, then
 693 discriminant validity is supported for that construct (Hair et al., 2010). The discriminant
 694 validity between the constructs of this research was examined in a similar approach to
 695 previous studies (Kim et al., 2015; Sophonthummapharn, 2009), as illustrated in Table 6.
 696 AVE estimate of each construct of this research is larger than SIC estimate which supports
 697 discriminant validity of all constructs of this research.

698 Table 5: Results of Convergent Validity

Construct	CR (< 0.7)	AVE (< 0.5)	MSV	ASV
SCRM Adoption	0.873	0.633	0.462	0.281
Compatibility	0.907	0.709	0.543	0.409
Perceived Advantage	0.861	0.508	0.490	0.326
Observability	0.919	0.742	0.498	0.312
External Pressure	0.900	0.603	0.487	0.340
Governmental Support	0.879	0.707	0.517	0.324
Business Angel Support	0.895	0.682	0.546	0.357
Venture Capitalist Support	0.817	0.603	0.331	0.169
Internal Financial Resource	0.925	0.674	0.518	0.408
Business Incubation	0.871	0.695	0.546	0.392
Crowdfunding support	0.839	0.566	0.365	0.254
trialability	0.895	0.684	0.350	0.231
Manager Attitude	0.899	0.691	0.602	0.194
Manager Innovativeness	0.879	0.644	0.602	0.252

699

700

Table 6: Discriminant Validity Result

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
SCRM Adoption	0.796													
Compatibility	0.680	0.842												
Perceived Advantage	0.528	0.642	0.713											
Observability	0.465	0.642	0.651	0.861										
External Pressure	0.581	0.698	0.626	0.574	0.776									
Governmental Support	0.540	0.678	0.583	0.614	0.627	0.841								
Business Angel Support	0.586	0.645	0.616	0.641	0.635	0.642	0.826							
Venture Capitalist Support	0.467	0.575	0.430	0.333	0.372	0.287	0.423	0.776						
Internal Financial Support	0.606	0.717	0.700	0.706	0.675	0.719	0.702	0.433	0.821					
Business Incubation	0.605	0.737	0.625	0.598	0.678	0.649	0.739	0.443	0.720	0.834				
Crowdfunding Support	0.504	0.604	0.570	0.494	0.541	0.478	0.475	0.476	0.542	0.562	0.752			
Trialability	0.404	0.524	0.486	0.579	0.552	0.519	0.545	0.262	0.592	0.511	0.445	0.827		
Manager Attitude	0.318	0.507	0.335	0.321	0.432	0.412	0.410	0.363	0.471	0.552	0.381	0.324	0.831	
Innovativeness	0.332	0.546	0.465	0.457	0.499	0.540	0.560	0.274	0.543	0.630	0.363	0.388	0.776	0.803

701

702 Harman's single factor test (Podsakoff et al., 2003) was used to assess common method bias
 703 of the reported data. The largest variance explained by an individual construct was 73.641
 704 percent and none of the constructs can account for more than percent of the covariance. To
 705 further examine the common method bias, we compared general method factors of the model
 706 with the original measurement model. The general method factors include all the principal

707 variables' indicators, while each indicator's variance was substantively explained by the
708 principal variables and by the method. The results indicate that the general method factor
709 loadings are all insignificant, while the principal variables loading were all significant.
710 Therefore it can be concluded that common method variance is not an issue in this study.
711 RMSEA was .038 and Chi-square ($\chi^2 = 3056.820$; $df = 1968$; $p = .000$) was significant (p
712 $<.001$), all incremental fit measures, namely NFI (.854), TLI (.937), IFI (.943), and CFI
713 (.942) were above minimum requirements, AGFI was above 0.8 cut-off point, and the X^2/df
714 was 1.553, which is within the threshold of 1.0 to 3.0. These all reflect adequate fit in spite of
715 outrages value of GFI. These findings are similar to those in previous studies, such as Sharma
716 et al., 2005; where the GFI index is too sensitive to the sample size, its effect can be ignored.
717 As illustrated in Table 7, the structural model fit was used afterwards to quantify each
718 hypothesis being tested. All hypotheses p-values were calculated at the alpha level of 0.05 to
719 determine the significance of every association.

720 Table 7: Structural Path Analysis Result

Dependent variables		Independent variables	Estimate	S.E.	C.R.	P
SCRMAD	<---	PADV	0.215	0.081	2.654	**
SCRMAD	<---	COMP	0.354	0.092	3.847	***
SCRMAD	<---	OBSRV	0.117	0.046	2.543	**
SCRMAD	<---	TRALA	0.132	0.052	2.538	*
SCRMAD	<---	INTRF	0.175	0.087	2.011	*
SCRMAD	<---	BUSUB	0.082	0.065	1.272	0.203
SCRMAD	<---	INOVA	-0.198	0.103	-1.922	0.065
SCRMAD	<---	EXTP	0.173	0.067	2.582	**
SCRMAD	<---	GOVRN	0.249	0.071	3.508	***
SCRMAD	<---	BUSNG	0.156	0.065	2.398	*
SCRMAD	<---	VENCA	0.184	0.061	3.016	**
SCRMAD	<---	CROWF	0.205	0.071	2.887	**
SCRMAD	<---	ATDU	-0.007	0.087	-0.086	0.932

721
722 Table 8 and Figure 2 present a summary of the investigation results for all the hypotheses
723 outlined in this research. A total of 10 out of the 13 hypothesised relationships in the
724 proposed model were supported (two at $p < .000$; five at $p < .01$; three at $p < .05$). Four main
725 hypotheses were being investigated in this study: the direct relationship between
726 technological characteristics and SCRM adoption (H1); the positive relationship between

727 organisational characteristics and SCRM adoption (H2); the direct relationship between
728 environmental characteristics and SCRM adoption (H3); and finally the positive relationship
729 between managerial characteristics and SCRM adoption (H4). All sub-hypotheses within H1
730 and H3 were supported. Within the organisational characteristics hypothesis, the positive
731 relationship between internal financial resources and SCRM adoption (H2a) was supported,
732 while H2b, which proposed the presence of a relationship between the availability of business
733 incubation and the adoption of SCRM applications was rejected; as was the positive
734 relationship between managerial characteristics and SCRM adoption (H4), as none of its sub-
735 hypotheses were supported.

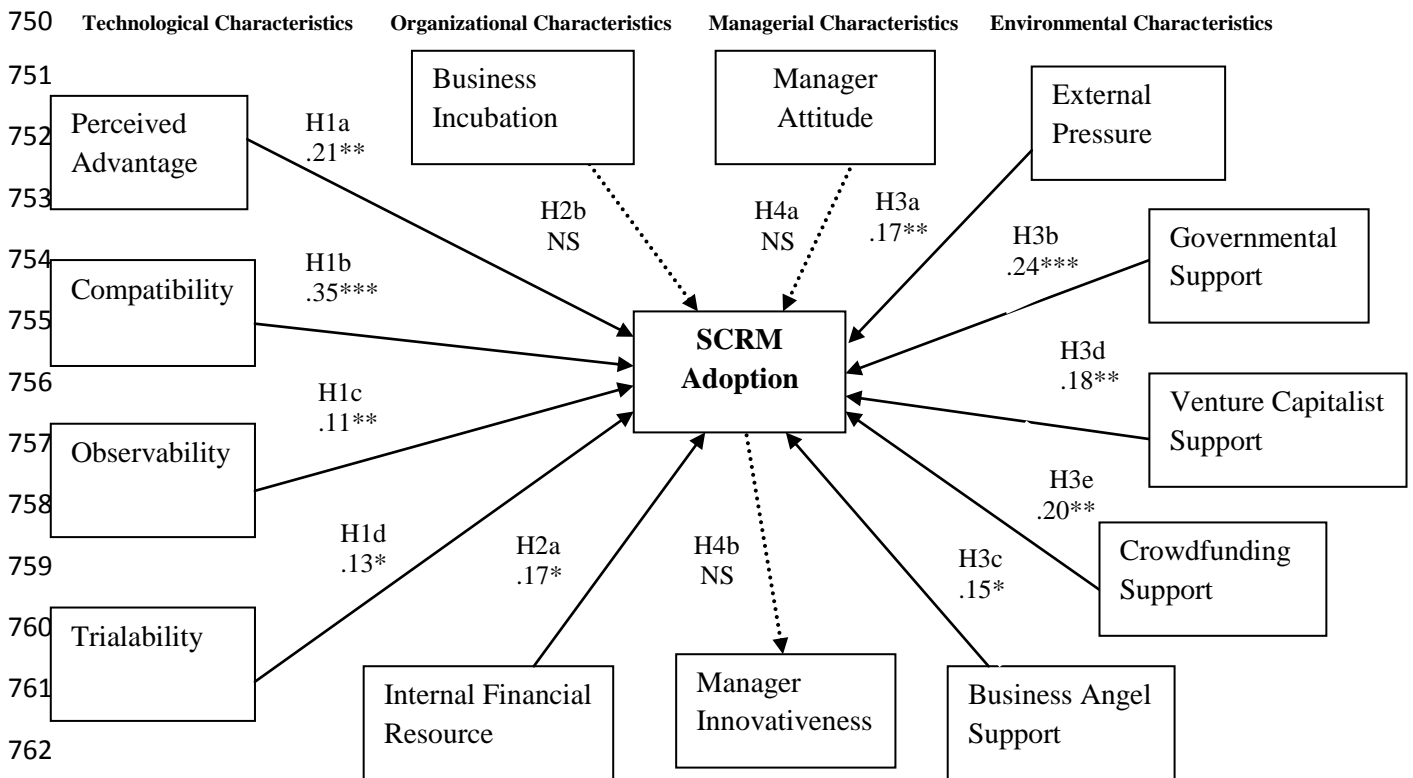
736 Among technological characteristics constructs, compatibility had the strongest effect (H1b)
737 on the adoption of SCRM applications; followed by perceived advantage (H1a), trialability
738 (H1d) and observability (H1c). Furthermore, it was detected that the availability of internal
739 financial resources positively affects the adoption of SCRM applications (H2a). Among
740 environmental characteristic components, it was detected that (in order of significance)
741 governmental support (H3b), crowd funding support (H3e), venture capitalist support (H3d),
742 external pressures (H3a), and business angels support (H3c) each have a direct and positive
743 influence on the adoption of SCRM applications. Overall, compatibility has the most
744 significant effect ($\beta = 0.354$) on SCRM adoption, followed by governmental support ($\beta =$
745 0.249), perceived advantage ($\beta = 0.215$), crowdfunding support ($\beta = 0.205$), venture capitalist
746 support ($\beta = 0.184$), internal financial resources ($\beta = 0.175$), external pressures ($\beta = 0.173$),
747 business angels' support ($\beta = 0.156$), trialability ($\beta = 0.132$) and observability ($\beta = 0.117$).

748 Table 8: Hypotheses and Results

Hypothesis		β	Sig
H1a	Perceived relative advantages of SCRM technologies are positively related to SCRM applications adoption in start-up companies.	0.215**	$P < .01$
H1b	Compatibility of SCRM technologies with existing company technologies is positively related to SCRM applications adoption in start-up companies.	0.354***	$P < .000$

H1c	Observability of SCRM technologies is positively related to SCRM applications adoption in start-up companies.	0.117**	<i>P</i> <.01
H1d	Trialability of SCRM technologies is positively related to SCRM applications adoption in start-up companies.	0.132*	<i>P</i> <.05
H2a	Availability of internal financial resources is positively related to SCRM applications adoption in start-up companies.	0.175*	<i>P</i> <.05
H2b	Availability of business incubation is positively related to SCRM applications adoption in start-up companies.	0.082	NS
H3a	Existing external pressures are positively related to SCRM applications adoption in start-up companies.	0.173**	<i>P</i> <.01
H3b	Availability of government supports are positively related to SCRM applications adoption in start-up companies.	0.249***	<i>P</i> <.000
H3c	Availability of business angels supports are positively related to SCRM applications adoption in start-up companies.	0.156*	<i>P</i> <.05
H3d	Availability of venture capitalists supports are positively related to SCRM applications adoption in start-up companies.	0.184**	<i>P</i> <.01
H3e	Availability of crowdfunding supports are positively related to SCRM applications adoption in start-up companies.	0.205**	<i>P</i> <.01
H4a	Manager positive attitude towards SCRM technologies is positively related to SCRM applications adoption in start-up companies.	-0.007	NS
H4b	Manager innovativeness is positively related to SCRM applications adoption in start-up companies.	-0.198	NS

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763

Figure2. Final Model of SCRM Adoption

764 5. Discussion

765

766 Numerous theories have been developed over many decades to describe the adoption of new

767 technologies by organisations, including the Technology Acceptance Model (TAM) (Davis &

768 Davis, 1989; Davis et al., 1989); the Theory of Planned Behaviour (TPB) (Ajzen, 1991); the
 769 Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003);
 770 and the Diffusion of Innovation (DOI) (Rogers, 2003). All have provided substantial insight
 771 into different aspects of the adoption of CRM-technologies. In this study, DOI and TAM
 772 theories, along with the TOE framework, were utilised to model constructs likely to affect
 773 SCRM adoption in start-up businesses. Table 9 summarises the models that adopted DOI,
 774 TAM or TOE framework within different CRM technologies.

775 Table 9: Summary of Relevant Studies in Relation to Applicable Theories

Authors	Theories	Factors	Technology Adoption	Organisation
Ko et al. (2008)	DOI	-CRM Adoption Process -Organisation Characteristic	CRM Adoption	Korean Fashion Industry
Peltier <i>et al.</i> (2009)	DOI, TAM, UAUT TOE Framework	-Environment Factors -CRM Technology Factors -Owner Characteristic -Firm Characteristic	CRM Technology Adoption	Small Retailers
Ramdani and Kawalek (2009)	DOI, TOE Framework	-Technological Context -Organisational Context -Environmental Context	Adoption of ECRM	SMEs
Hung <i>et al.</i> (2010)	DOI, TEO Framework	-Characteristic of Organisation -Characteristic of CRMS	CRM System Adoption	Hospitals
Zheng (2011)	TAM, DOI, UAUT, TPB, TEO Framework	-Mobile Technological Advantage -Organisational Context -External Pressure -Industrial Characteristic -Managerial Characteristic	mCRM Strategy Adoption	(SMEs)
Alshawi <i>et al.</i> (2011)	DOI	-Organisational Factor -Technical Factor -Data quality Factor	CRM Adoption	SMEs
Ata and Tokar (2012)	DOI, TOE Framework	-CRM Organisation -Operational CRM -Customer-Centric Management	CRM Adoption	Business-to-Business (B2B) markets
Law <i>et al.</i> (2013)	DOI, TAM, TOE Framework,	-Perceived Attributes of Innovation -Organisational Attribute -Environmental Attributes	CRM Implementation and Adoption	Service sector

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777 The model devised in this study is the first to utilise DOI and TAM theories and the TOE
 778 framework in the SCRM adoption domain. The model shares several constructs with previous
 779 studies, namely perceived advantage, compatibility, observability, trialability, financial
 780 resources, manager innovativeness and attitudes, external pressure and governmental support.
 781 However, it also offers a number of newly developed constructs, by considering business
 782 incubation, and the support offered by venture capitalists, crowd funding and business angels.

783 In this model, in a similar way to previous research, such as that undertaken by Ramdani et
784 al., (2009), Zheng, (2011), Alshawi et al., (2011) and Law et al., (2013); it was found that
785 technological characteristic constructs had a major positive effect on SCRM adoption in start-
786 up businesses. Just as Ko et al., (2008), Ramdani et al., (2009), Hung et al., (2010), Zheng,
787 (2011), Peltier et al., (2009) Alshawi et al., (2011) and Law et al., (2013) found, in this
788 research, organisational characteristic constructs were discovered to affect SCRM adoption.
789 In addition, this model has investigated the effects of business incubation as a new construct
790 within the organisational characteristic dimension, and detected its insignificant effect on
791 SCRM adoption. In a similar way to Peltier et al., (2009) and Law et al., (2013),
792 environmental characteristic constructs were found to have a positive significant effect on
793 SCRM adoption. Added to this, the model introduced in this study reveals that support from
794 venture capitalists, crowd funding and business angels also positively affected SCRM
795 adoption. Unlike Zheng, (2011) and Peltier et al., (2009), the research findings in this study
796 did not show any significant influence for managerial characteristic constructs on SCRM
797 adoption in start-up businesses.

798 **6. Research Implications**

799 The eventual success of a start-up company depends on many different factors, including
800 their team, business model, target market, product and design (Ruokolainen & Aarikka-
801 Stenroos, 2016). In recent years, the emergence of social networking technologies has
802 significantly changed the corporate landscape (Moroni et al., 2015), with social networking
803 platforms providing a multitude of opportunities to sell products, make contacts with
804 customers, and maintain business relationships (Blank & Dorf, 2012). The relatively lower
805 cost of marketing and customer management achieved by utilising social networking
806 platforms has offered an ideal opportunity for the marketing, sales and customer management
807 teams of start-up companies (Eric Ries., 2011). This study has sought to introduce and test a

808 model that hypothesises the effects of technological, organisational, environmental and
809 managerial characteristics on SCRM adoption within start-up businesses. As indicated in this
810 research, when considering technological characteristics, compatibility has the most
811 significant effect on the adoption of SCRM applications. Perceived advantage, observability
812 and trialability are the next important factors to consider when choosing the best SCRM
813 solution. This finding leads to the conclusion that the main focus when marketing SCRM
814 technologies should be on promoting their respective benefits and highlighting the additional
815 advantages available when compared with competitors. This study also identified that the
816 availability of internal financial resources increases the chance of the adoption of SCRM
817 applications, and therefore the marketing teams of companies responsible for developing
818 SCRM solutions should focus their efforts on targeting start-up businesses with a stronger
819 financial profile. Since governmental support was the most important environmental factor in
820 the adoption of SCRM technologies, it is sensible to market SCRM solutions to companies
821 who have experience in successfully attracting government funds; while increasing
822 government funding would also intensify the level of adoption of SCRM applications,
823 although it may be prudent to channel such statutory investment through venture capitalists.
824 Finally, the results of this research indicated that business incubation and managerial
825 characteristics have no significant effect on the adoption of SCRM applications in start-up
826 companies.

827 **7. Limitations of the Study and Future Research**

828 Despite providing a set of encouraging and useful research results, the findings of this
829 study should be viewed with a degree of caution, as like any research, they have a number of
830 limitations. Firstly, the adoption of SCRM applications is the only techno-relationship
831 innovation that is examined in this research. Therefore, the findings are only relevant to
832 SCRM applications, as other technologies such as eCRM and mCRM have not been

833 considered. Secondly, the data collected in this study was cross-sectional and all hypotheses
834 were investigated at a single point of time. As a consequence, this approach cannot lead to
835 definite conclusions, and more robust longitudinal data will be required in future to further
836 investigate the factors influencing the adoption of SCRM applications adoption. Thirdly, the
837 research results were obtained from start-up companies located within specific urban areas of
838 Malaysia, and therefore care should be taken when generalising findings of this research to
839 start-up companies in other countries. Fourthly, this research is measuring the adoption of
840 SCRM applications in general, and does not focus on any one specific type of SCRM
841 application. It is possible that different types of SCRM application could create differences in
842 the adoption processes. It would be interesting to discover how far the results of this research
843 are applicable to the adoption of different types of SCRM applications used in a variety of
844 different contexts. Drawing on the work of previous studies, the adoption of SCRM
845 applications was measured by considering the behavioural intention to adopt. However,
846 intention to adopt cannot be used as a substitute to actual adoption, and therefore, all results
847 should be interpreted with caution. Demographic effects were not considered in this study
848 and some demographic variables may have greater impact than others, and are worthy of
849 investigation. Lastly, this study was conducted on a voluntary basis, and as such, results are
850 not applicable to mandatory settings.

851 This research only focuses on SCRM technologies adoption, so traditional CRM, eCRM, and
852 mCRM technologies are excluded from the scope of this research. Start-up companies should
853 usually reach to their stable business model within five years of establishment, and after that,
854 they are usually ranked as a SME company. This research only focuses on high-tech start-up
855 companies which are developing new products (i.e., BioTech start-up companies) or
856 providing new services (i.e., IT start-up companies). Therefore, SMEs or newly established

857 companies which merely selling a product or service are not rank as start-up companies and
858 are out of the scope of this research.

859 Future research could attempt to replicate this study in other CRM domains, such as mCRM
860 or eCRM. As discussed above, further research is needed to obtain longitudinal data in order
861 to allow for the detection of factors that may influence the adoption of SCRM applications in
862 the longer term. Such research could include expanding the model's framework by adding
863 extra variables such as perceived risk and long term usage from theories such as the Service
864 Dominant Theory (SDT) that require longer term monitoring and data collection. Another
865 interesting direction for future research could be to conduct a more focused study to
866 determine the factors presenting specific challenges to start-up companies when adopting
867 different types of SCRM technologies. Finally, future research could move one step further
868 by considering the actual adoption of SCRM applications rather than an intention to adopt in
869 future modelling, as measuring actual adoption would increase the validity of research
870 results.

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882 Table 1
883 Demographic Information of Respondents

	884
Gender	
Male	65.80 %
Female	34.20 %
Age	
Less than 31	20.56%
31-40 years	28.27 %
41-50 years	33.69 %
51-60 years	17.48 %
Education Level	
High school	3.08 %
Diploma	7.45 %
Bachelor' Degree	65.06 %
Master' Degree	22.62 %
Doctor of Philosophy	1.79%
Managerial Level	
C-level Executive	52.96 %
Medium Level Executive	22.62 %
First-Level Executive	24.42 %
Company Size (number of employees)	
5 person or less	51.17 %
6-10 persons	20.05 %
11-20 persons	18.25 %
21-30 persons	7.45 %
31 persons or more	3.08 %
Company Size (capital investment-thousand Ringgit)	
50 thousand Ringgit or less	18.25%
51 – 150 thousand Ringgit	64.8%
151-250 thousand Ringgit	9.25%
251-350 thousand Ringgit	5.39%
350 thousand Ringgit or more	2.31%

Table 3
Variable reliabilities and descriptive statistics

	Alpha	Mean	Std Dev
SCRM Adoption	0.874	5.31	1.385
Compatibility	0.904	5.17	1.485
Perceived Advantage	0.871	5.18	1.397
Observability	0.921	5.18	1.484
External Pressure	0.911	5.19	1.392
Governmental Support	0.839	5.22	1.372
Business Angel Support	0.897	5.26	1.367
Venture Capitalist Support	0.797	5.21	1.407
Internal Financial Resource	0.931	5.16	1.408
Business Incubation	0.876	4.48	1.538
Crowdfunding Support	0.838	5.26	1.323
Trialability	0.897	5.29	1.373
Manager Attitude	0.899	5.16	1.272
Manager Innovativeness	0.877	5.00	1.228

892 Table 2: SCRM Adoption
893

Availability of SCRM application	%
Yes	43.7%
No	56.3%
Number of adopted SCRM applications	
One application	21.17 %
Two applications	54.72 %
Three applications	24.11 %
Sale function	
Yes	74.71 %
No	25.29 %
Customer support function	
Yes	51.18 %
No	48.82 %
Marketing function	
Yes	80.00 %
No	20.00 %

894 **References**

- 895 Aboelmaged, M. G. (2014). Predicting e-readiness at firm-level: An analysis of
896 technological, organizational and environmental (TOE) effects on e-maintenance
897 readiness in manufacturing firms. *International Journal of Information Management*,
898 34(5), 639–651. doi:10.1016/j.ijinfomgt.2014.05.002
- 899 Abou-Shouk, M. A., Lim, W. M., & Megicks, P. (2016). Using competing models to evaluate
900 the role of environmental pressures in ecommerce adoption by small and medium sized
901 travel agents in a developing country. *Tourism Management*, 52, 327–339.
902 doi:10.1016/j.tourman.2015.07.007
- 903 Aggarwal, S., McCabe, L., Leary, B., & Aggarwal, A. (2012). 2012 Impact of Social Business
904 in Small and Medium Business Study.
- 905 Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human*
906 *Decision Processes*, 50(2),
907 179–211.
- 908 Almoawi, A. R. N. (2011). E-Commerce Adoption Among Small and Medium Enterprises in
909 Saudi Arabia. PhD thesis, Universiti Utara Malaysia.
- 910 Alshamaila, Y., Papagiannidis, S., & Li, F. (2013). Cloud computing adoption by SMEs in
911 the North East of England. *Journal of Enterprise Information Management*, 26(3), 250–
912 275.
- 913 Alshawi, S., Missi, F., & Irani, Z. (2011). Organisational, technical and data quality factors in
914 CRM adoption — SMEs perspective. *Industrial Marketing Management*, 40(3), 376–
915 383. doi:10.1016/j.indmarman.2010.08.006
- 916 Alt, R., & Reinhold, O. (2012). Social Customer Relationship Management (Social CRM).
917 *Business & Information Systems Engineering*, 4(5), 287–291. doi:10.1007/s12599-
918 012-0225-5
- 919 Aral, S., Dellarocas, C., & Godes, D. (2013). Social media and businesstransformation: a
920 framework for research. *Information Systems Research*, 24(1), 3–13.
- 921 Askool, S., & Nakata, K. (2011). A conceptual model for acceptance of social CRM systems
922 based on a scoping study. *Ai & Society*, 26(3), 205–220. doi:10.1007/s00146-010-0311-
923 5
- 924 Assimakopoulos, C., Papaioannou, E., Sarmaniotis, C., & Georgiadis, C. K. (2015). Online
925 reviews as a feedback mechanism for hotel CRM systems. *Anatolia*, 26(1), 5–20.
926 doi:10.1080/13032917.2014.933707
- 927 Awa, H. O., Ojiabo, O. U., & Emecheta, B. C. (2015). Integrating TAM, TPB and TOE
928 frameworks and expanding their characteristic constructs for e-commerce adoption by
929 SMEs. *Journal of Science & Technology Policy Management*, 6(1), 76–94.
- 930 Awasthi, P., & Sangle, P. S. (2012). Adoption of CRM technology in multichannel
931 environment: a review (2006-2010). *Business Process Management Journal*, 18(3),
932 445–471. doi:10.1108/14637151211232641
- 933 Ayrancı, A. E., & Ayrancı, E. (2015). Connections between Leadership Features and
934 Attitudes Towards Innovativeness: A Research on Small and Medium-Sized Business
935 Owners. *Procedia - Social and Behavioral Sciences*, 195(3), 1535–1542.
936 doi:10.1016/j.sbspro.2015.06.456
- 937 Bagozzi, R. P. Y., & Yi, O. (1988). “On the Evaluation of Structural Equation Models.”
938 *Journal of the Academy of Marketing Science*, 16(1), 74–94.
- 939 Bartkus, J. R., Kabir, M. H., & Ngene, G. (2013). Does venture capital portfolio size matter?
940 *Studies in Economics and Finance*, 30(3), 192–208. doi:10.1108/SEF-01-2012-0005
- 941 Beaulieu, T., Sarker, S., & Sarker, S. (2015). A Conceptual Framework for Understanding
942 Crowdfunding. *Communications of the Association for Information Systems*, 37(1), 1–

- 943 31. Retrieved from <http://aisel.aisnet.org/cais/vol37/iss1/1>
- 944 Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis
945 of covariance structures. *Psychological Bulletin*, 88(3), 588–606.
- 946 Bianchi, C., & Andrews, L. (2015). Investigating marketing managers' perspectives on social
947 media in Chile. *Journal of Business Research*, 68(12), 2552–2559.
948 doi:10.1016/j.jbusres.2015.06.026
- 949 Blank, S., & Dorf, B. (2012). *The Startup Owner's Manual: The Step-by-step Guide for*
950 *Building a Great Company*, K&S Ranch.
- 951 Braojos-Gomez, J., Benitez-Amado, J., & Javier Llorens-Montes, F. (2015). How do small
952 firms learn to develop a social media competence? *International Journal of Information*
953 *Management*, 35(4), 443–458. doi:10.1016/j.ijinfomgt.2015.04.003
- 954 Brown, J. R., Martinsson, G., & Petersen, B. C. (2012). Do financing constraints matter for
955 R&D? *European Economic Review*, 56(8), 1512–1529.
956 doi:10.1016/j.euroecorev.2012.07.007
- 957 Buzzetto-More, N. A. (2013). "Social media and prosumerism",. *Informing Science and*
958 *Information Technology*, 10(1), 67–80.
- 959 Byrne, B. M. (2010). *Structural Equation Modeling with AMOS: Basic Concepts,*
960 *Applications, and Programming*. New York, NY: Taylor and Francis Group.
- 961 Carter, L., & Belanger, F. (2005). The utilization of e-government services: citizen trust,
962 innovation and acceptance factors. *Information Systems Journal*, 15(1), 5–25.
- 963 Chang, T., Liao, L., & Hsiao, W. (2005). An Empirical Study on the e-CRM Performance
964 Influence Model for Service Sectors in Taiwan. *IEEE International Conference on E-*
965 *Technology, E-Commerce and E-Service*, 240–245. doi:10.1109/EEE.2005.33
- 966 Chaouali, W. (2016). Once a user, always a user: Enablers and inhibitors of continuance
967 intention of mobile social networking sites. *Telematics and Informatics*, 33(4), 1022–
968 1033. doi:10.1016/j.tele.2016.03.006
- 969 Chau, M., & Xu, J. (2012). Business intelligence in blogs: understanding consumer
970 interactions and communities. *MIS Quarterly*, 36(4), 1189–1216.
- 971 Chebrolu, S. B., & Ness, L. R. (2012). "Impact of cloud aspects on IT effectiveness." *Journal*
972 *of Information Technology Management*, 23(1), 1–12.
- 973 Chen, H., Chiang, R. H. L., & Storey, V. C. (2012). Business intelligence and analytics: from
974 big data to big impact. *MIS Quarterly*, 36(4), 1165–1188.
- 975 Cho, C., Halford, J. T., Hsu, S., & Ng, L. (2016). Do managers matter for corporate
976 innovation? *Journal of Corporate Finance*, 36, 206–229.
977 doi:10.1016/j.jcorpfin.2015.12.004
- 978 Chong, S., & Pervan, G. (2007). Factors Influencing the Extent of Deployment of Electronic
979 Commerce for Small-and Medium Sized Enterprises. *Journal of Electronic Commerce*
980 *in Organizations*, 5(1), 1–29. doi:10.4018/jeco.2007010101
- 981 Chuang, T., Nakatani, K., & Zhou, D. (2013). An exploratory study of the extent of
982 information technology adoption in SMEs: an application of upper echelon theory.
983 *Journal of Enterprise Information Management*, 22(1/2), 183–196.
- 984 Cordova, A., Dolci, J., & Gianfrate, G. (2015). The Determinants of Crowdfunding Success:
985 Evidence from Technology Projects. *Procedia - Social and Behavioral Sciences*, 181,
986 115–124. doi:10.1016/j.sbspro.2015.04.872
- 987 Coyle, Laurie F. Wurster, Yanna Dharmasthira, Chad Eschinger, Bianca Francesca Granetto,
988 Joanne M. Correia, Federico De Silva, Tom Eid, Ruggero Contu, Colleen Graham,
989 Fabrizio Biscotti, Chris Pang, D. S. (2013). Forecast: Enterprise Software Markets,
990 Worldwide, 2012-2017, 2Q13 Update. *Gartner Inc.* Retrieved from
991 <https://www.gartner.com/doc/2515815>
- 992 Cunningham, W. M. (2012). Crowdfunding. In *The Jobs Act* (pp. 61–81). Apress.

- 993 doi:10.1007/978-1-4302-4756-2_5
- 994 Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer
995 technology: A comparison of two theoretical models. *Management Science*, 35(8), 982–
996 1003.
- 997 DeTienne, D. R., McKelvie, A., & Chandler, G. N. (2015). Making sense of entrepreneurial
998 exit strategies: A typology and test. *Journal of Business Venturing*, 30(2), 255–272.
999 doi:10.1016/j.jbusvent.2014.07.007
- 1000 Ding, Z., Au, K., & Chiang, F. (2015). Social trust and angel investors' decisions: A
1001 multilevel analysis across nations. *Journal of Business Venturing*, 30(2), 307–321.
1002 doi:10.1016/j.jbusvent.2014.08.003
- 1003 Dutta, S., & Evrard, P. (1999). Information technology and organisation within European
1004 small enterprises. *European Management Journal*, 17(3), 239–251.
- 1005 E.M., G., J.S., H., & P.Y., K. (2012). "Crowdfunding: why the people are motivated to post
1006 and fund projects on crowdfunding platforms". *Northwestern University Creative Action
1007 Lab, Sheridan Drive, Evanston. Gompers, P., Lerner, J., 2004. The venture capital
1008 cycle. MIT Press.*
- 1009 El Ouiridi, M., El Ouiridi, A., Segers, J., & Pais, I. (2016). Technology adoption in employee
1010 recruitment: The case of social media in Central and Eastern Europe. *Computers in
1011 Human Behavior*, 57, 240–249. doi:10.1016/j.chb.2015.12.043
- 1012 Ellahi, A., & Bokhari, R. H. (2013). Key quality factors affecting users' perception of social
1013 networking websites. *Journal of Retailing and Consumer Services*, 20(1), 120–129.
1014 doi:10.1016/j.jretconser.2012.10.013
- 1015 Elliot, B., Alex, C., & Benn, K. (2007). Internal infrastructural impacts on RFID perceptions
1016 and commitment: knowledge, operational procedures, and information-processing
1017 standards. *Decision Sciences*, 38, 423–449.
- 1018 Eric Ries. (2011). *The Lean Startup: How Today's The Lean Startup: How Today's
1019 Entrepreneurs Use Continuous Innovation to create radically successful Businesses*,
1020 Crown Business, United States.
- 1021 Fathian, M., Akhavan, P., & Hoorali, M. (2008). E-readiness assessment of non-profit ICT
1022 SMEs in a developing country: The case of Iran. *Technovation*, 28(9), 578–590.
- 1023 Fishbein, M., & Ajzen, I. (1977). Belief, attitude and behavior: An introduction to theory and
1024 research. *Philosophy & Rhetor*, 10(2), 130–132.
- 1025 Fornell, C., & Larcker, D. F. (1982). "Evaluating Structural Equation Models with
1026 Unobservable Variables and Measurement Error." *Journal of Marketing Research*,
1027 18(1), 39–50.
- 1028 Gangwar, H., Date, H., & Ramaswamy, R. (2015). Understanding determinants of cloud
1029 computing adoption using an integrated TAM-TOE model. *Journal of Enterprise
1030 Information Management*, 28(1), 107–130.
- 1031 García-Quevedo, J., Pellegrino, G., & Vivarelli, M. (2014). R&D drivers and age: Are
1032 young firms different? *Research Policy*, 43(9), 1544–1556.
1033 doi:10.1016/j.respol.2014.04.003
- 1034 Gartner, Maoz, M., Sarner, A., Sussin, J., & Thompson, E. (2011). "The concise social CRM
1035 Vendor guide for 2012" Gartner,.
- 1036 Géczy, P., Izumi, N., & Kôiti, H. (2012). "Cloudsourcing: managing cloud adoption",.
1037 *Global Journal of Business Research*, 6(2), 57–70.
- 1038 Ghezzi, A., Gastaldi, L., Lettieri, E., Martini, A., & Corso, M. (2016). A role for startups in
1039 unleashing the disruptive power of social media. *International Journal of Information
1040 Management*. doi:10.1016/j.ijinfomgt.2016.04.007
- 1041 Ghobakhloo, M., & Tang, S. H. (2014). The role of owner/manager in adoption of electronic
1042 commerce in small businesses. *Journal of Small Business and Enterprise Development*,

1043 20(4), 754 – 787.

1044 Gibbs, J. L., & Kraemer, K. L. (2004). A cross- country investigation of the determinants of
1045 scope of e-commerce use: an institutional approach,. *Electronic Markets*, 14(2), 124–
1046 137.

1047 Gleasure, R. (2015). Resistance to crowdfunding among entrepreneurs: An impression
1048 management perspective. *Journal of Strategic Information Systems*, 24(4), 219–233.

1049 Goh, K. Y., Heng, C. S., & Lin, Z. (2012). Social Media Brand Community and Consumer
1050 Behavior: Quantifying the Relative Impact of User- and Marketer-Generated Content.
1051 *SSRN Electronic Journal*. doi:10.2139/ssrn.2048614

1052 Grandon, E. E., & Pearson, J. M. (2004). Electronic commerce adoption: an empirical study
1053 of small and medium US businesses. *Information & Management*, 42(1), 197–216.
1054 doi:10.1016/j.im.2003.12.010

1055 Greenberg, P. (2010). The impact of CRM 2.0 on customer insight. *Journal of Business {&}*
1056 *Industrial Marketing*, 25(6), 410–419. doi:10.1108/08858621011066008

1057 Gualandris, J., & Kalchschmidt, M. (2014). Customer pressure and innovativeness: Their role
1058 in sustainable supply chain management. *Journal of Purchasing and Supply*
1059 *Management*, 20(2), 92–103. doi:10.1016/j.pursup.2014.03.001

1060 Guesalaga, R. (2016). The use of social media in sales: Individual and organizational
1061 antecedents, and the role of customer engagement in social media. *Industrial Marketing*
1062 *Management*, 54, 71–79. doi:10.1016/j.indmarman.2015.12.002

1063 Gupta, P., Seetharaman, A., & Raj, J. R. (2013). The usage and adoption of cloud computing
1064 by small and medium businesses. *International Journal of Information Management*,
1065 33(5), 861–874. doi:10.1016/j.ijinfomgt.2013.07.001

1066 Haas, P., Blohm, I., & Leimeister, J. M. (2014). An Empirical Taxonomy of Crowdfunding
1067 Intermediaries.

1068 Hair, J., Black, W., Babin, B., & Anderson, R. (2010). *Multivariate Data Analysis (7th*
1069 *Edition)*. Prentice Hall.

1070 Hameed, M. A., Counsell, S., & Swift, S. (2012). A conceptual model for the process of IT
1071 innovation adoption in organizations. *Journal of Engineering and Technology*
1072 *Management*, 29(3), 358–390.

1073 Hamilton, R. H. (2001). E-commerce new venture performance: how funding impacts
1074 culture. *Internet Research: Electronic Networking Applications and Policy*, 11(4), 277–
1075 285.

1076 Harrigan, P., Soutar, G., Choudhury, M. M., & Lowe, M. (2015). Modelling CRM in a social
1077 media age. *Australasian Marketing Journal*, 23(1), 27–37.
1078 doi:10.1016/j.ausmj.2014.11.001

1079 Harrison, D. A., Mykytyn, P. P., & Riemenschneider, C. K. (1997). Executive decisions
1080 about adoption of information technology in small business: Theory and empirical tests.
1081 *Information Systems Research*, 8(2), 171–195.

1082 Hassan, S., Mourad, M., & Tolba, A. (2010). “Conceptualizing the influence of lead users
1083 and opinion leaders on accelerating the rate of innovation diffusion”,. *International*
1084 *Journal of Technology Marketing*, 5(3), 203–218.

1085 Hassan, S., Nadzim, S. Z. A., & Shiratuddin, N. (2015). Strategic Use of Social Media for
1086 Small Business Based on the AIDA Model. *Procedia - Social and Behavioral Sciences*,
1087 172, 262–269. doi:10.1016/j.sbspro.2015.01.363

1088 He, W., Zha, S., & Li, L. (2013). Social media competitive analysis and text mining: A case
1089 study in the pizza industry. *International Journal of Information Management*, 33, 464–
1090 472. doi:10.1016/j.ijinfomgt.2013.01.001

1091 Holmes-Smith, P. (2012). Structural Equation Modelling (using AMOS): From the
1092 Fundamentals to Advanced Topics. Melbourne: SREAMS. School Research Evaluation

- 1093 and Measurement Services (SREMS).
- 1094 Hossain, M. A., & Quaddus, M. (2011). "The adoption and continued usage intention of
1095 RFID: an integrated framework." *Information Technology {&} People*, 24(3), 236–256.
- 1096 Hsbollah, H. M., & Idris, K. M. (2009). E-Learning Adoption: The Role of Relative
1097 Advantages, Trialability and Academic Specialisation. *Campus-Wide Information*
1098 *Systems*, 26(1), 54–70.
- 1099 Hung, S.-Y., Hung, W.-H., Tsai, C.-A., & Jiang, S.-C. (2010). Critical factors of hospital
1100 adoption on CRM system: Organizational and information system perspectives.
1101 *Decision Support Systems*, 48(4), 592–603. doi:10.1016/j.dss.2009.11.009
- 1102 Hussein, R. M. S., & Mourad, M. (2014). The adoption of technological innovations in a B2B
1103 context: an empirical study on the higher education industry in Egypt. *Journal of*
1104 *Business & Industrial Marketing*, 29(6), 525–545.
- 1105 Hyytinen, A., Pajarinen, M., & Rouvinen, P. (2015). Does innovativeness reduce startup
1106 survival rates? *Journal of Business Venturing*, 30(4), 564–581.
- 1107 Insightpool. (2015). Driving Word Of Mouth Through Intelligent Social Solutions Powered
1108 by Data. Retrieved from <http://insightpool.com/>
- 1109 Javadi, M. H. M., & Azmoon, Z. (2011). Ranking branches of System Group company in
1110 Terms of acceptance preparation of electronic Customer Relationship Management
1111 using AHP method. *Procedia Computer Science*, 3, 1243–1248.
- 1112 Jeon, B. N., Han, K. S., & Lee, M. J. (2006). Determining factors for the adoption of e-
1113 business: The case of SMEs in Korea. *Applied Economics*, 38(16), 1905–1916.
- 1114 Jeyaraj, A., Rottman, J. W., & Lacity, W. C. (2006). "A review of the predictors, linkages,
1115 and biases in IT innovation adoption research." *Journal of Information Technology*,
1116 21(1), 1–23.
- 1117 Ji, G., & Yang, G. (2014). Constructing sustainable supply chain under double environmental
1118 medium regulations. *International Journal of Production Economics*, 147, 211–219.
1119 doi:10.1016/j.ijpe.2013.04.012
- 1120 Ji, H., & Liang, Y. (2016). Exploring the Determinants Affecting E-Government Cloud
1121 Adoption in China. *International Journal of Business and Management*, 11(4), 81.
1122 doi:10.5539/ijbm.v11n4p81
- 1123 Kane, G. C., Palmer, D., Phillips, A. N., Kiron, D., & Buckley, N. (2014). Moving
1124 beyondmarketing: Generating social business value across the enterprise. *MIT*
1125 *SloanManagement Review*, 1–39.
- 1126 Karahanna, E., Straub, D. W., & Chervany, N. L. (1999). Information technology adoption
1127 across time: A cross-sectional comparison of pre-adoption and postadoption beliefs. *MIS*
1128 *Quarterly*, 23(2), 183–213.
- 1129 Keuschnigg, C. (2004). Venture Capital Backed Growth. *Journal of Economic Growth*, 9(2),
1130 239–261. doi:10.1023/B:JOEG.0000031428.35711.fc
- 1131 Kim, C., Lee, I.-S., Wang, T., & Mirusmonov, M. (2015). Evaluating effects of mobile CRM
1132 on employees' performance. *Industrial Management {&} Data Systems*, 115(4), 740–
1133 764.
- 1134 Kim, S. K., Park, M. J., & Rho, J. J. (2013). Effect of the government's use of social media
1135 on the reliability of the government: focus on Twitter. *Public Manage. Rev.* 1, 1.
1136 <http://dx.doi.org/10.1080/14719037.2013.822530>.
- 1137 Kirtiş, A. K., & Karahan, F. (2011). To Be or Not to Be in Social Media Arena as the Most
1138 Cost-Efficient Marketing Strategy after the Global Recession. *Procedia - Social and*
1139 *Behavioral Sciences*, 24, 260–268. doi:10.1016/j.sbspro.2011.09.083
- 1140 Kline, R. B. (2010). Principles and practice of structural equation modeling (3rd ed.). New
1141 York: Guilford Press.
- 1142 Ko, E., Kim, S. H., Kim, M., & Woo, J. Y. (2008). Organizational characteristics and the

- 1143 CRM adoption process. *Journal of Business Research*, 61(1), 65–74.
1144 doi:10.1016/j.jbusres.2006.05.011
- 1145 Koster, S., & Stel, A. (2014). The relationship between start-ups, market mobility and
1146 employment growth: An empirical analysis for Dutch regions, 93(1), 203–217.
- 1147 Kurnia, S., Karnali, R. J., & Rahim, M. M. (2015). A qualitative study of business-to-
1148 business electronic commerce adoption within the Indonesian grocery industry: A multi-
1149 theory perspective. *Information and Management*, 52(4), 518–536.
1150 doi:10.1016/j.im.2015.03.003
- 1151 Kwon, S.-W., & Arenius, P. (2010). Nations of entrepreneurs: A social capital perspective.
1152 *Journal of Business Venturing*, 25(3), 315–330. doi:10.1016/j.jbusvent.2008.10.008
- 1153 Lacoste, S. (2016). Perspectives on social media and its use by key account managers.
1154 *Industrial Marketing Management*, 54, 33–43. doi:10.1016/j.indmarman.2015.12.010
- 1155 Lasrado, L. A., & Lugmayr, A. (2013). Crowdfunding in Finland. In *Proceedings of*
1156 *International Conference on Making Sense of Converging Media - AcademicMindTrek*
1157 *'13* (pp. 194–201). New York, New York, USA: ACM Press.
1158 doi:10.1145/2523429.2523490
- 1159 Law, A. K. Y., Ennew, C. T., & Mitussis, D. (2013). Adoption of Customer Relationship
1160 Management in the Service Sector and Its Impact on Performance. *Journal of*
1161 *Relationship Marketing*, 12(4), 301–330. doi:10.1080/15332667.2013.846204
- 1162 Lee, J.-S., Kim, S., & Pan, S. (2014). The role of relationship marketing investments in
1163 customer reciprocity. *International Journal of Contemporary Hospitality Management*,
1164 26(8), 1200–1224.
- 1165 Lertwongsatien, C., & Wongpinunwatana, N. (2003). E-commerce adoption in Thailand: An
1166 empirical study of small and medium enterprises (SMEs). *Journal of Global Information*
1167 *Technology Management*, 6(3), 67–83.
- 1168 Li, Y., Zhao, Y., Tan, J., & Liu, Y. (2008). “Moderating Effects of Entrepreneurial
1169 Orientation on Market Orientation-Performance Linkage: Evidence from Chinese Small
1170 Firms.” *Journal of Small Business Management*, 46(1), 113–133.
- 1171 Lilai, X. (2010). Business incubation in China Effectiveness and perceived contributions to
1172 tenant enterprises. *Management Research Review*, 33(1), 90–99.
1173 doi:10.1108/01409171011011599
- 1174 Lin, A., & Chen, N.-C. (2012). “Cloud computing as an innovation: Perception, attitude, and
1175 adoption.” *International Journal of Information Management*, 32(6), 533–540.
- 1176 Lin, H.-F. (2014). Understanding the determinants of electronic supply chain management
1177 system adoption: using the technology–organization–environment framework.
1178 *Technological Forecasting and Social Change*, 86, 80–92.
- 1179 Lukkarinen, A., Teich, J. E., Wallenius, H., & Wallenius, J. (2016). Success drivers of online
1180 equity crowdfunding campaigns. *Decision Support Systems*, 87, 26–38.
1181 doi:10.1016/j.dss.2016.04.006
- 1182 Luo, X., Zhang, J. (Jennifer), & Duan, W. (2013). Social Media and Firm Equity Value.
1183 *Information Systems Research*, 24(1), 146 – 163.
- 1184 MacCallum, R. C., & Browne, M. W. (1993). The use of causal indicators in covariance
1185 structure models: Some practice issues. *Psychological Bulletin*, 114(3), 533–541.
- 1186 Maduku, D. K., Mpinganjira, M., & Duh, H. (2016). Understanding mobile marketing
1187 adoption intention by South African SMEs: A multi-perspective framework.
1188 *International Journal of Information Management*, 36(5), 711–723.
1189 doi:10.1016/j.ijinfomgt.2016.04.018
- 1190 Malthouse, E. C., Haenlein, M., Skiera, B., Wege, E., & Zhang, M. (2013). Managing
1191 Customer Relationships in the Social Media Era: Introducing the Social CRM House.
1192 *Journal of Interactive Marketing*, 27(4), 270–280.

- 1193 Mannan Choudhuryab, M Harrigan, P. (2014). CRM to social CRM: the integration of new
1194 technologies into customer relationship management. *Journal of Strategic Marketing*,
1195 22(2), 149–176.
- 1196 Marcus, A., Malen, J., & Ellis, S. (2013). The Promise and Pitfalls of Venture Capital as an
1197 Asset Class for Clean Energy Investment: Research Questions for Organization and
1198 Natural Environment Scholars. *Organization & Environment*, 26(1), 31–60.
1199 doi:10.1177/1086026612474956
- 1200 Massolution. (2015). 2015CF: The Crowdfunding Industry Report, 2015 (accessed May 7,
1201 2015, available at) [http://www.crowdsourcing.org/editorial/global-crowdfundingmarket-](http://www.crowdsourcing.org/editorial/global-crowdfundingmarket-to-reach-344b-in-2015-predicts-massolutions-2015cf-industry-report/)
1202 [to-reach-344b-in-2015-predicts-massolutions-2015cf-industry-report/](http://www.crowdsourcing.org/editorial/global-crowdfundingmarket-to-reach-344b-in-2015-predicts-massolutions-2015cf-industry-report/) 45376.
- 1203 Maxwell, A. L., Jeffrey, S. A., & Lévesque, M. (2011). Business angel early stage decision
1204 making. *Journal of Business Venturing*, 26(2), 212–225.
1205 doi:10.1016/j.jbusvent.2009.09.002
- 1206 MCAAlert. (2015). My Community Alert. *Mcalert.net*. Retrieved from <http://www.mcalert.net/>
- 1207 Milovi, B. (2012). Social Media and eCRM as a Prerequisite for Hotel Success. *Management*
1208 *Information Systems*, 7(3), 26–31.
- 1209 Minetti, R. (2011). Informed Finance and Technological Conservatism. *Review of Finance*,
1210 15(3), 633–692. doi:10.1093/rof/rfq024
- 1211 Miranda, M. Q., Farias, J. S., de Araújo Schwartz, C., & de Almeida, J. P. L. (2016).
1212 Technology adoption in diffusion of innovations perspective: introduction of an ERP
1213 system in a non-profit organization. *RAI Revista de Administração E Inovação*, 13(1),
1214 48–57. doi:10.1016/j.rai.2016.02.002
- 1215 Mitteness, C., Sudek, R., & Cardon, M. S. (2012). Angel investor characteristics that
1216 determine whether perceived passion leads to higher evaluations of funding potential.
1217 *Journal of Business Venturing*, 27(5), 592–606. doi:10.1016/j.jbusvent.2011.11.003
- 1218 Mollick, E. (2014). The dynamics of crowdfunding: An exploratory study. *Journal of*
1219 *Business Venturing*, 29(1), 1–16. doi:10.1016/j.jbusvent.2013.06.005
- 1220 Moore, G. C., & Benbasat, I. (1991). Development of an instrument to measure the
1221 perceptions of adopting an information technology innovation. *Information Systems*
1222 *Research*, 2(3), 192–222.
- 1223 Moroni, I., Arruda, A., & Araujo, K. (2015). The Design and Technological Innovation: How
1224 to Understand the Growth of Startups Companies in Competitive Business Environment.
1225 *Procedia Manufacturing*, 3(Ahfe), 2199–2204. doi:10.1016/j.promfg.2015.07.361
- 1226 Morrisette, S. G. (2009). A Profile of Angel Investors. *The Journal of Private Equity*, 10(3),
1227 52–66.
- 1228 Mourad, M. (2010). “Students’ adoption of online education service: empirical evidence from
1229 the Higher Education (HE) market”. *Online Information Review*, 34(4), 604–617.
- 1230 Mulaik, S. A., James, L. R., Van Alstine, J., Bennet, N., Lind, S., & Stilwell, C. D. (1989).
1231 “Evaluation of Goodness-of-Fit Indices for Structural Equation Models.” *Psychological*
1232 *Bulletin*, 105(3), 430–45.
- 1233 Nagy, B. G., Pollack, J. M., Rutherford, M. W., & Lohrke, F. T. (2012). The Influence of
1234 Entrepreneurs’ Credentials and Impression Management Behaviors on Perceptions of
1235 New Venture Legitimacy. *Entrepreneurship Theory and Practice*, 36(5), 941–965.
1236 doi:10.1111/j.1540-6520.2012.00539.x
- 1237 Ndubisi, N. O., & Sinti, Q. (2006). Consumer attitudes, system’s characteristics and internet
1238 banking adoption in Malaysia. *Management Research News*, 29(1-2), 16–27.
- 1239 Ngai, E. W. T., Tao, S. S. C., & Moon, K. K. L. (2015). Social media research: Theories,
1240 constructs, and conceptual frameworks. *International Journal of Information*
1241 *Management*, 35(1), 33–44. doi:10.1016/j.ijinfomgt.2014.09.004
- 1242 Nugroho, M. A. (2015). Impact of Government Support and Competitor Pressure on the

- 1243 Readiness of SMEs in Indonesia in Adopting the Information Technology. *Procedia*
1244 *Computer Science*, 72, 102–111. doi:10.1016/j.procs.2015.12.110
- 1245 Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York, NY:
1246 McGraw-Hill, Inc.
- 1247 Olbrich, R., & Holsing, C. (2012). Modeling Consumer Purchasing Behavior in Social
1248 Shopping Communities with Clickstream Data. *International Journal of Electronic*
1249 *Commerce*, 16(2), 15–40. doi:10.2753/JEC1086-4415160202
- 1250 Oliveira, T., & Martins, M. F. (2010). “Firms patterns of e-business adoption: evidence for
1251 the European Union-27.” *The Electronic Journal Information Systems Evaluation*, 13(1),
1252 47–56.
- 1253 Park, M. J., Choi, H., Kim, S. K., & Rho, J. J. (2015). Trust in government’s social media
1254 service and citizen's patronage behavior. *Telematics and Informatics*, 32(4), 629–641.
1255 doi:10.1016/j.tele.2015.02.006
- 1256 Parveen, F., & Noor Ismawati, J. (2015). Social media usage and organizational performance:
1257 Reflections of Malaysian social media managers. *Telematics and Informatics*, 32(1), 67–
1258 78.
- 1259 Peltier, J. W., Schibrowsky, J. A., & Yushan Zhao, Y. (2009). Understanding the Antecedents
1260 to the Adoption of CRM Technology by Small Retailers: Entrepreneurs vs Owner-
1261 managers. *International Small Business Journal*, 27(3), 307–336.
1262 doi:10.1177/0266242609102276
- 1263 Peng, R., Xiong, L., & Yang, Z. (2012). “Exploring tourist adoption of tourism mobile
1264 payment: an empirical analysis”,. *Journal of Theoretical and Applied Electronic*
1265 *Commerce Research*, 7(1), 21–33.
- 1266 Poba-Nzaou, P., Lemieux, N., Beaupré, D., & Uwizeyemungu, S. (2016). Critical challenges
1267 associated with the adoption of social media: A Delphi of a panel of Canadian human
1268 resources managers. *Journal of Business Research*, 69(10), 4011–4019.
1269 doi:10.1016/j.jbusres.2016.06.006
- 1270 Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method
1271 biases in behavioral research: a critical review of the literature and recommended
1272 remedies. *The Journal of Applied Psychology*, 88(5), 879–903. doi:10.1037/0021-
1273 9010.88.5.879
- 1274 Potocan, V., & Nedelko, Z. (2013). Innovativeness of IT Managers - Exploring Influences of
1275 Personal Values on IT Managers’ Innovativeness. *Procedia Technology*, 9, 291–303.
1276 doi:10.1016/j.protcy.2013.12.033
- 1277 Premkumar, G., Roberts, M., Premkumar, G., & Margaret, R. (1999). Adoption of new
1278 information technologies in rural small businesses. *OMEGA, the International Journal*
1279 *of Management Science*, 27(4), 467–484. doi:10.1016/S0305-0483(98)00071-1
- 1280 Rahayu, R., & Day, J. (2015). Determinant Factors of E-commerce Adoption by SMEs in
1281 Developing Country: Evidence from Indonesia. *Procedia - Social and Behavioral*
1282 *Sciences*, 195, 142–150. doi:10.1016/j.sbspro.2015.06.423
- 1283 Ramayah, T., Ling, N. S., Taghizadeh, S. K., & Rahman, S. A. (2016). Factors influencing
1284 SMEs website continuance intention in Malaysia. *Telematics and Informatics*, 33(1),
1285 150–164.
- 1286 Ramdani, B., Chevers, D., & Williams, D. A. (2013). SMEs’ adoption of enterprise
1287 applications A technology-organisation-environment model. *Journal of Small Business*
1288 *and Enterprise Development*, 20(4), 735–753.
- 1289 Ramdani, B., Kawalek, P., & Lorenzo, O. (2009). Predicting SMEs’ adoption of enterprise
1290 systems. *Journal of Enterprise Information Management*, 22(1/2), 10–24.
1291 doi:10.1108/17410390910922796
- 1292 Ratinho, T., Harms, R., & Groen, A. (2013). Business Incubators: (How) Do They Help Their

1293 Tenants? In *New Technology-Based Firms in the New Millenium*. Emerald Group
1294 Publishing Limited. doi:10.1108/S1876-0228(2013)0000010011

1295 Reid, A., & Catterall, M. (2015). *Hidden data quality problems in CRM implementation*
1296 *marketing, technology and customer commitment in the new economy*.

1297 Riemenschneider, C. K., & McKinney, V. R. (2001). Assessing belief differences in small
1298 business adopters and non-adopters of web-based ecommerce. *Journal of Computer*
1299 *Information Systems*, 42(2), 101–107.

1300 Rodriguez, M., & Trainor, K. (2016). A conceptual model of the drivers and outcomes of
1301 mobile CRM application adoption. <http://dx.doi.org/10.1108/JRIM-12-2014-0075>.

1302 Rogers, E. M. (2003). *Diffusion of innovation (5th ed.)*. New York: the Free Press.

1303 Rossi, M. (2014). The New Ways to Raise Capital: An Exploratory Study of Crowdfunding.
1304 *International Journal of Financial Research*, 5(2), p8. doi:10.5430/ijfr.v5n2p8

1305 Ruokolainen, J., & Aarikka-Stenroos, L. (2016). Rhetoric in customer referencing: Fortifying
1306 sales arguments in two start-up companies. *Industrial Marketing Management*, 54, 188–
1307 202.

1308 San-Martína, S., N.H.Jiméneza, & B.López-Catalánb. (2016). The firms benefits of mobile
1309 CRM from the relationship marketing approach and the TOE model. *Spanish Journal of*
1310 *Marketing - ESIC*, 20(1), 18–29.

1311 Schultz, M., & Pick. (2012). From CM to CRM to CN2 : A research agenda for the marketing
1312 communications transition,. In *Advances in Advertising Research (Vol. III)* (pp. 421–
1313 432).

1314 Sharma, S., Mukherjee, S., Kumar, A., & Dillon, W. R. (2005). “A simulation study to
1315 investigate the use of cutoff values for assessing model fit in covariance structure
1316 models.” *Journal of Business Research*, 58(1), 935–43.

1317 Sila, I. (2013). Factors affecting the adoption of B2B e-commerce tehnologies.Electronic
1318 Commerce Research,. *Electronic Commerce Research*, 13(2), 199–236.

1319 Sin, K. Y., Osman, A., Salahuddin, S. N., Abdullah, S., Lim, Y. J., & Sim, C. L. (2016).
1320 Relative Advantage and Competitive Pressure towards Implementation of E-commerce:
1321 Overview of Small and Medium Enterprises (SMEs). *Procedia Economics and Finance*,
1322 35, 434–443. doi:10.1016/S2212-5671(16)00054-X

1323 Sinclair, J. K., & Vogus, C. E. (2011). Adoption of social networking sites: an exploratory
1324 adaptive structuration perspective for global organizations. *Information Technology and*
1325 *Management*, 12(4), 293–314. doi:10.1007/s10799-011-0086-5

1326 Small Business Trends. (2011). “Small Business Survey by Deluxe reveals snapshot of the
1327 social media savvy Entrepreneurs”.Retrieved from
1328 <http://smallbiztrends.com/2011/06/social-media-savvyentrepreneurs.html>.

1329 Sophonthummapharn, K. (2009). The adoption of techno-relationship innovations: A
1330 framework for electronic customer relationship management. *Marketing Intelligence*
1331 *{&} Planning*, 27(3), 380–412. doi:10.1108/02634500910955254

1332 Sørheim, R. (2005). Business angels as facilitators for further finance: an exploratory study.
1333 *Journal of Small Business and Enterprise Development*, 12(2), 178–191.
1334 doi:10.1108/14626000510594593

1335 Steiger, J. H. (2007). Understanding the limitations of global fit assessment in structural
1336 equation modeling. *Personality and Individual Differences*, 42(5), 893–898.
1337 doi:10.1016/j.paid.2006.09.017

1338 Stephanie, A. M., & Robinson, J. (2009). Do business angels benefit their investee
1339 companies? *International Journal of Entrepreneurial Behaviour {&} Research*, 15(2),
1340 187–208. doi:10.1108/13552550910944575

1341 Syed Shah Alam, A., Yunus, B., Mohd Fauzi, M., Alam, S. S., Ali, M. Y., & Jani, M. F.
1342 (2011). An empirical study of factors affecting electronic commerce adoption among

- 1343 SMEs in Malaysia. *Journal of Business Economics and Management*, 12(2), 375–399.
- 1344 Tan, K. S., Chong, S. C., Lin, B., & Eze, U. C. (2009). Internet-based ICT adoption:
1345 Evidence from Malaysian SMEs. *Industrial Management and Data Systems*, 109(2),
1346 224–244.
- 1347 Tate, M., Evermann, J., & Gable, G. (2015). An integrated framework for theories of
1348 individual attitudes toward technology. *Information {&} Management*, 52(6), 710–727.
- 1349 Teo, T. S. H., Lin, S., & Lai, K. (2009). Adopters and non-adopters of e-procurement in
1350 Singapore: An empirical study. *Omega*, 37(5), 972–987.
1351 doi:10.1016/j.omega.2008.11.001
- 1352 Thakur, R., Angriawan, A., & Summey, J. H. (2016). Technological opinion leadership: The
1353 role of personal innovativeness, gadget love, and technological innovativeness. *Journal*
1354 *of Business Research*, 69(8), 2764–2773. doi:10.1016/j.jbusres.2015.11.012
- 1355 Thong, J. Y. L., & Yap, C. S. (1995). CEO characteristics, organizational characteristics and
1356 information technology adoption in small businesses. *Omega, International of Journal*
1357 *Management Sciences*, 23(4), 429–442.
- 1358 Tornatzky, L. G., & Fleischer, M. (1990). *The process of technological innovation*.
1359 Lexington: Lexington Books.
- 1360 Trainor, K. J., Andzulis, J. (Mick), Rapp, A., & Agnihotri, R. (2014). Social media
1361 technology usage and customer relationship performance: A capabilities-based
1362 examination of social CRM. *Journal of Business Research*, 67(6), 1201–1208.
1363 doi:10.1016/j.jbusres.2013.05.002
- 1364 Ueki, Y. (2016). Customer pressure, customer–manufacturer–supplier relationships, and
1365 quality control performance. *Journal of Business Research*, 69(6), 2233–2238.
1366 doi:10.1016/j.jbusres.2015.12.035
- 1367 Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of
1368 information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478.
- 1369 Verma, D., & Verma, D. S. (2013). “Managing customer relationships through mobile CRM
1370 in organized retail outlets”,. *International Journal of Engineering Trends and*
1371 *Technology*, 4(5), 1696–1701.
- 1372 Voges, K., & Pulakanam, V. (2011). Enabling factors influencing Internet adoption by New
1373 Zealand small and medium size retail enterprises. *International Review of Business*
1374 *Research Papers*, 7(1), 106e117.
- 1375 Voisey, P., Gornal, L., Jones, P., & Brychan, T. (2006). The measurement of success in a
1376 business incubation project. *Journal of Small Business and Enterprise Development*,
1377 13(3), 454–468. doi:10.1108/14626000610680307
- 1378 Wagner, D., & Wagner, H.-T. (2013). Online Communities and Dynamic Capabilities: A
1379 Cross-Case Examination of Sensing, Seizing, and Reconfiguration Research-in-
1380 Progress. In *Proceedings of Proceedings of the 19th Americas Conference on*
1381 *Information Systems Chicago, Illinois, USA*, (1), 1–8.
- 1382 Wang, W. T., & Lai, Y. J. (2014). Examining the adoption of KMS in organizations from an
1383 integrated perspective of technology, individual, and organization. *Computers in Human*
1384 *Behavior*, 38, 55–67.
- 1385 Wang, Y.-S., Li, H.-T., Li, C.-R., & Zhang, D.-Z. (2016). Factors affecting hotels’ adoption
1386 of mobile reservation systems: A technology-organization-environment framework.
1387 *Tourism Management*, 53, 163–172. doi:10.1016/j.tourman.2015.09.021
- 1388 Wen, K.-W., & Chen, Y. (2010). E-business value creation in Small and Medium Enterprises:
1389 a US study using the TOE framework. *International Journal of Electronic Business*,
1390 8(1), 80–100.
- 1391 Wheaton, B., Muthen, B., Alwin, D. F., & Summer, G. F. (1977). Assessing reliability and
1392 stability in panel models. In D. R. Heise (Ed.). In *Sociological Methodology* (pp. 84–

- 1393 136). San Francisco: Jossey-Bass.
- 1394 Wonglimpiyarat, J. (2016). The innovation incubator, university business incubator and
1395 technology transfer strategy: The case of Thailand. *Technology in Society*, 46, 18–27.
1396 doi:10.1016/j.techsoc.2016.04.002
- 1397 Woodside, A. G., Bernal, P. M., & Coduras, A. (2016). The general theory of culture,
1398 entrepreneurship, innovation, and quality-of-life: Comparing nurturing versus thwarting
1399 enterprise start-ups in BRIC, Denmark, Germany, and the United States. *Industrial*
1400 *Marketing Management*, 53, 136–159.
- 1401 Wu, B., & Wang, B. (2009). Group CRM: a New Telecom CRM Framework from Social
1402 Network Perspective, 3–10.
- 1403 Wymer, S. A., & Regan, E. A. (2005). Factors influencing e-commerce adoption and use by
1404 small and medium businesses. *Electronic Markets*, 15(4), 438–453.
- 1405 Yaokuang, L., Ling, L., Juan, W., & Peng, L. (2014). Who is more likely to become business
1406 angels? Evidence of business angels and potential business angels from China. *Journal*
1407 *of Entrepreneurship in Emerging Economies*, 6(1), 4–20. doi:10.1108/JEEE-06-2013-
1408 0017.
- 1409 Yap, C. S., Thong, J. Y. L., & Raman, K. S. (1994). Effect of government incentives on
1410 computerization in small business. *European Journal of Information Systems*, 3(3),
1411 191–206.
- 1412 Yashisa, T. (2010). Business angels in Japan. In *Venture Capital: An International Journal of*
1413 *Entrepreneurial Finance* (pp. 259–273). doi:10.1080/136910699295893
- 1414 Ye, N., Yang, S. S., & Aranda, B. M. (2013). The analysis of service provider-user
1415 coordination for resource allocation in cloud computing. *Information-Knowledge-*
1416 *Systems Management*, 12(1), 1–24. doi:10.3233/IKS-2002-00214
- 1417 Yu, X., Nguyen, B., Han, S. H., Chen, C.-H. S., & Li, F. (2015). Erratum to: Electronic CRM
1418 and perceptions of unfairness. *Information Technology and Management*, 16(4), 363.
- 1419 Zheng, V. (2011). The value proposition of adopting mCRM strategy in UK SMEs. *Journal*
1420 *of Systems and Information Technology*, 13(2), 223–245.
1421 doi:10.1108/132872611111136025
- 1422 Zhu, G., Sangwan, S., & Lu, T. (2010). A new theoretical framework of technology
1423 acceptance and empirical investigation on self-efficacy-based value adoption model.
1424 *Nankai Business Review International*, 1(4), 345 – 372.
- 1425