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Once Bitten, Twice Shy? The Relationship Between Entrepreneurs' Business Failure Experience and Entrepreneurial Collaboration

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Abstract

This paper draws on entrepreneurial failure and firm collaboration literature to conduct two studies on serial entrepreneurs in a developing economy. In Study 1, we used qualitative semi-structured interviews to derive insights from 16 entrepreneurs with prior business failure experience. We observed that business failure experience incentivizes some serial entrepreneurs to collaborate with other entrepreneurs, and this phenomenon is shaped by religious orientation. In Study 2, we conducted a survey of 421 serial entrepreneurs to empirically test the effect of business failure experience and entrepreneurial collaboration. We also examined the moderating role of religious and family orientations on this relationship. The results from the survey revealed a positive relationship between entrepreneurs' business failure experience and entrepreneurial collaboration. In addition, our results indicate that the positive impact of business failure experience on entrepreneurial collaboration is stronger among entrepreneurs leading non-family firms than family firms. Among firms led by non-religious oriented entrepreneurs, business failure experience was significantly positively related to collaboration. Theoretical and practical implications are considered.

Key words: *Africa; business failure experience; religious orientation; entrepreneurial collaboration; Ghana.*

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1. Introduction

Over the past three decades, entrepreneurship scholars have indicated that failure experience shapes individuals' current and future actions and behaviors as well as their ability to deal with challenges surrounding venture formation (Higgins, 2005; Pozner, 2008; Shepherd & Haynie, 2011). Although business failure experience can discourage risk-taking and potentially hamper entrepreneurial development (Cacciotti, Hayton, Mitchell & Giazitzoglu, 2016; Morgan, & Sisak, 2016), it also has the potential to trigger new knowledge and insights. Researchers have highlighted the detrimental effects of business failure experience (Amankwah-Amoah et al., 2021; Shepherd & Haynie, 2011; Singh, Corner & Pavlovich, 2015) and the opportunities that can be accrued from this phenomenon (Cope, 2011; Edmondson, 2011; Francis & Zheng, 2010; Kim & Miner, 2007). For example, research indicates that business failure experience brings financial, social and psychological costs to the entrepreneur (Shepherd & Haynie, 2011; Ucbasaran, Shepherd, Lockett & Lyon, 2013). Although business failure is very painful and costly, it offers an opportunity for entrepreneurs to learn (Cope, 2011; McGrath, 1999). Particularly, entrepreneurs can utilize the information related to why the business failed to embark on a new entrepreneurial journey (Shepherd, 2003; Shepherd & Cardon, 2009). Thus, business failure experience can help entrepreneurs to reposition themselves for new entrepreneurial actions (Shepherd, Patzelt & Wolfe, 2011).

Contrarily, given the cost associated with business failure (i.e., financial, social and psychological), entrepreneurs may choose to exit their entrepreneurial careers. In this situation, negative emotions associated with business failure (i.e., pain, remorse, shame, humiliation, anger, guilt, and blame and the fear of the unknown) are likely to deter the entrepreneur to resurface (Cacciotti et al., 2016; Cacciotti et al., 2020; Wyrwich, Stuetzer & Sternberg, 2016; Shepherd, 2003).

For example, business failure experience can deter entrepreneurs from collaborating with others in successive ventures, when the failure can be attributed to external factors such as a partner's failure to fulfil their obligations or their inaction. By entrepreneurial collaboration, we are referring to formation of business ties and interpersonal relationships for the purpose of advancing the new venture (Quince, 2001). Some evidence suggests that business failure undercuts entrepreneurs' self-efficacy when they attribute failure to individual-specific factors (Gist & Mitchell, 1992; Hsu, Wiklund & Cotton, 2017). This undermines serial entrepreneurship development which is essential for economic growth (Wright, Robbie & Ennew 1997; Hsu et al., 2017; Gompers, Kovner, Lerner & Scharfstein, 2006). Previous studies suggest that serial entrepreneurs learn immensely from prior experience (Eggers & Song, 2015; Plehn-Dujowich, 2010). However, the current literature fails to capture how business failure experience can influence entrepreneurial collaboration.

While the entrepreneurship literature provides a better understanding associated with the costs and opportunities stemming from business failure experience, knowledge is lacking regarding how failure experience relates to entrepreneurial collaborative arrangements (i.e., the sharing of ownership and active control of a business venture). For many entrepreneurs, the question relating to whether they should "go alone" or collaborate with others when starting a new venture following failure is crucial. Although inter-firm relationships have been examined from different perspectives (Antoncic & Prodan, 2008; Kang & Park, 2012; Nooteboom, 2003), collaborations involving the individual entrepreneur have not been examined extensively (Downing & Shanley, 2017; Quince, 2001). Given that entrepreneurial collaboration is an important research agenda, this paper focuses on how failure experience affects collaborative entrepreneurship.

In addition, whilst recent scholarly development has highlighted the influence of religious orientation in entrepreneurship (Neubert, Bradley, Ardianti & Simiyu, 2017), we still lack insights into how an entrepreneur's religious orientation may impact the effect of business

failure experience and the entrepreneur's collaboration with others. This view is succinctly highlighted by Tracey (2012), who puts it this way: "for the most part, management researchers have stubbornly refused to engage meaningfully with religion and religious forms of organization, or to consider the effects of religious beliefs and practices on secular organizations" (p.1). Furthermore, extant research shows that family orientation in small firms tends to influence how the entrepreneur operates (Miller, Minichilli & Corbetta, 2013; Zahra, Hayton & Salvato, 2004). Nevertheless, effort to examine how family-firm orientation explains the variations of business failure experience on entrepreneurial collaboration is also lacking. This is also particularly important because research shows that family and non-family firms are managed and operated differently (Miller et al., 2013; Naldi, Nordqvist, Sjöberg & Wiklund, 2007; Zahra, Hayton & Salvato, 2004). For example, when working in either a family or non-family business environment, an entrepreneur is likely to face different pressures to embark on certain entrepreneurial activities. A growing literature has shown that learning occurs among business owners after business failure (Frota Vasconcellos Dias & Martens 2019; Acheampong & Tweneboah-Koduah 2018), nevertheless, there remains limited insights on the extent to which this is influenced by family orientation.

To address these theoretical and empirical deficits, we develop and test a theoretical model on the relationship between business failure and entrepreneurial collaboration. We conducted two studies to examine the issues. First, we conducted a qualitative study of former business owners in Ghana to help enrich our understanding of the role of business failure, the effects of prior entrepreneurial failure experiences and the impact on their actions including their ownership structure and religion in designing their responses to early warning signals of decline and failure. Based on this analysis and review of the literature, the theoretical model was then tested in Study 2. We conducted a survey of serial entrepreneurs (i.e., individuals with experience of prior venture failure and then restart another venture) to help examine the effects

of business failure, the role of religion and ownership structure. Taken together, it was hypothesized that the failure affects collaborative arrangements.

Our study contributes to literature on entrepreneurial failure (Cope, 2011; Yamakawa, Peng & Deeds, 2015). The entrepreneurship research suggests that business failure impacts entrepreneurial processes (Cope, 2011; Knott & Posen, 2005; Ucbasaran et al., 2013; Yamakawa et al., 2015). In addition, business failure experience could help entrepreneurs exploit new business opportunities (Ucbasaran, Alsos, Westhead & Wright, 2007). However, how business failure experience impacts entrepreneurs to collaborate has largely been assumed in the entrepreneurship literature (Amankwah-Amoah, Boso & Antwi-Agyei, 2018; Boso et al., 2019; Ucbasaran, Westhead, Wright & Flores, 2010). Our study empirically provides empirical analysis of the association between entrepreneurs' business failure experience and their collaborative activities in the aftermath of the failure.

Our study further introduces family and religious orientations as important boundary conditions for the influence of business failure experience on entrepreneurial collaboration. Entrepreneurs may attribute business failure to religious beliefs and family members. In most African countries, religion plays a significant role in the everyday life of the individual which transcends business operations (Asamoah-Gyadu, 2005). There is substantial evidence to suggest that religious orientation is related to the individual's well-being as well as his or her psychological state (Zita & Chamberlain, 1992; Boadella, 1998). In particular, individuals with strong religious orientation may attribute their failure to other people in society, including family members, and may have entrepreneurially declined opportunities to collaborate with other individuals (Frankel & Hewitt, 1994). Thus, we expect that religious and family orientation will have a salient impact on the relationship between business failure experience and entrepreneurial collaboration.

The remainder of the article is organized as follows. First, we present a brief review of the literature on business failure, collaboration and religion. Second, we present the approaches

adopted to collect data and key findings of Studies 1 and 2. Third, we discuss the implications of our findings for theory, practice and future research.

2. Theoretical Background and Hypothesis

2.1 Business failure

An important strand of the entrepreneurship literature underpinning this paper is the entrepreneurial failure and collaboration literatures. Business failure manifests when the business is unable to generate a turnaround after decline leading to collapse (Shepherd, 2003). Defined as “the cessation of involvement in a venture because it has not met a minimum threshold for economic viability as stipulated by the (founding) entrepreneur”, business failure remains increasingly common in the entrepreneurial process (Ucbasaran et al., 2013, p175). Existing research offers inconsistent results on the potential effects of business failure. There are dual fundamental theories in seeking to understand the effects of business failure: the competitive and contagion perspectives (Lang & Stulz, 1992). The contagion perspective of business failure (Akhigbe, Martin & Whyte, 2005) suggests that failure has knock-on effects on parties connected to the failed venture. For the failed entrepreneur, failure can place an emotional and psychological burden on them, restrict their ability to move on (Shepherd, 2003) and stigmatize their societal standing (Shepherd & Haynie, 2011; Singh et al., 2015; Sutton & Callahan, 1987; Semadeni, Cannella, Fraser & Lee, 2008). Business failure is a “shock to the system” of entrepreneurs which can curtail their ability to take risks or engage in risk-taking behavior (Amankwah-Amoah & Wang, 2019) and lead to a period of grief (Shepherd, 2003).

According to the competitive effect, business failure is a source of positive learning and knowledge diffusion to other firms (Shepherd, 2003). It is also a source of innovation to enhance firm competitiveness (Amankwah-Amoah & Wang, 2019). Indeed, failure allows innovative knowledge development and nourishes surviving firms via personnel mobility from the departed firms (Hoetker & Agarwal, 2007). Entrepreneurial prior experience of failure can

also foster development of problem-solving capabilities and new networks. As Parker (2013) observed, “serial entrepreneurs obtain temporary benefits from spells of venturing which eventually die away” (p.652).

Although business failure scholars have documented progress on the consequences of business failure, studies have largely overlooked the effects on collaboration and alliances. Collaboration encompasses combining resources and expertise that allow partners to develop competitiveness and ensure long-term survival of their venture (Hitt, Ireland & Hoskisson, 2015; Quince, 2001). Entrepreneurial collaboration extends beyond just formation of new business to include interpersonal relationships (Quince, 2001) and is more likely to yield faster growth, shared risk and enhanced venture survival chances (Storey, 1994). Co-owning and co-managing new ventures allows cross-fertilization of ideas, sharing of risk, and access to different expertise and founding experiences (Quince, 2001).

2.2 Business failure and collaboration

Although external collaboration has the potential to allow a broader perspective of business matters (Quince, 2001), it also has a high chance of failure unless buttressed by deeper levels of trust. As an effective form of growth for new ventures, collaboration is at times not an attractive option for serial entrepreneurs who attribute their failed venture to misplaced trust, inactions and actions of co-owners. After business failure, some entrepreneurs tend to harbor distrust (Amankwah-Amoah, Antwi-Agyei, & Zhang, 2018) and therefore less likely to engage in collaboration. This is because owners may attribute business failure to factors such as a partner failing to meet his or her commitments and breach of trust. Such actions may lead to wariness and encourage serial entrepreneurs to go solo.

Although collaboration can enable resource-poor entrepreneurs to tap into others' resources and expertise to exploit market opportunities, the experience stemming from business failure can reduce entrepreneurs' ability to attract potential investors (Shepherd & Haynie,

2011; Singh et al., 2015). In the wake of failure, serial entrepreneurs are more likely to gravitate towards entrepreneurial collaboration rather than go solo to mitigate the effects of collaboration. Therefore, addressing their weakness through collaboration might be an attractive option. In the light of the above discussion, we hypothesize that:

H1: *Business failure experience is positively related to entrepreneurial collaboration.*

2.3 Non-family and family firms

Having described the two competing views on business failure and their potential link to entrepreneurial collaborative arrangements, we now turn to the contingency factors on this relationship. In general, family firms and non-family firms may differ fundamentally in terms of their decision structure and strategies (Chrisman, Chua & Sharma, 2005). By their very nature, family firms are guided by family values and ethos (Chrisman et al., 2009) and “transgenerational sustainability” (Chua, Chrisman & Sharma, 1999), thereby making it difficult to embrace change or allow outsiders to gain a foothold in the venture. The desire to protect family firms often hampers their ability to forge broader collaboration due to fear of losing control of the venture and undermining its traditional values. Thus, family involvement influences the key strategic decisions without involvement in the tactical aspect (Tsang, 2018). In contrast with family firms, non-family firms “are likely to establish external relationships that are more formal, competitive, and transitory in nature” (Chrisman et al., 2009, p.743). Past studies indicate that family firms often outclass non-family firms in the marketplace (Chrisman, Chua & Kellermanns, 2009).

On the other hand, individuals with family firms might be better able to absorb the effects of failure experience relative to individuals with non-family firms. This is partly due to the support social structure and networks and potential financial resources available to those heavily connected to the family. Given that family firms are built based on trust and community roots and support (Chrisman et al., 2009), serial entrepreneurs of family firms might become

more protective of the venture and curtail the scope of any collaboration following business failure experience. Hence, we propose the following hypothesis:

H2: *The impact of business failure experience on entrepreneurial collaboration will be stronger among non-family firms than family firms.*

2.4 Business failure experience and religious orientation

The role of religion in the workplace and organizational decision-making has gained attention in management literature (Chan-Serafin, Brief & George, 2013; Miller, 2002; Tracey, 2012). The increasing quest for better understanding of organizations and the effects of individual's beliefs on the organization have "forced religion back onto the scholarly table for social scientists to consider" (Smith, 2008, p.1561). There has been a surge of scholarly work on the role of religion and individual decision-making (see Tracey, 2012 Koerber & Neck, 2006). Although religion permeates all aspects of people's lives, decision-making, and ability to respond to market conditions, scholars have rarely investigated the effects of religious beliefs and norms on how individuals behave in entrepreneurial ventures (Tracey, 2012). Many entrepreneurs have turned to religion to seek not only to answer why misfortune befell their organization but also what they have done to deserve such a fate (Asamoah-Gyadu, 2005).

Despite this advancement in the literature, scholars have often glossed over the effects of religion and the role of religion in organizations during critical periods. Some scholars have hinted that religiousness may restrict managers' latitude to act during crisis (Koerber & Neck, 2006), possibly leading to ineffective actions during decline and in changing the competitive landscape. Many small businesses across the developing world have often sought divine intervention to help salvage their business, whilst others do not (Asamoah-Gyadu, 2005; Koerber & Neck, 2006). Indeed, many small and large business owners are guided by their religious traditions, norms and "code of conduct" (Koerber & Neck, 2006, p.307) and shape

their future actions following business failure. Accordingly, the above discussion yielded the following hypothesis.

H3: *The impact of business failure experience on entrepreneurial collaboration will be stronger among firms led by non-religious oriented entrepreneurs than religious oriented entrepreneurs.*

3. The qualitative study (Study 1)

3.1 Procedure

Given the limited scholarly works on the association between entrepreneurial failure and collaborative arrangements, we conducted a qualitative study to shed light on this issue (Gibbert, Ruigrok, & Wicki, 2008; Piekkari & Welch, 2018). This method is particularly effective in examining unexplored issues. We identified former business owners in the two main cities in Ghana: Accra and Kumasi. We focus on these two strategic cities as they are the two largest cities in Ghana account for substantial components of the economic activities in the country. Interestingly, with Ghana's population of over 31.6 million and projected to reach over 50 million by 2050 (Worldometers,2021) with religions breakdown as follows: Christians account for 71.2%, Muslims 17.6% and traditional religion accounting for 5.2% (Ghanaweb, 2020). Kumasi has the population of over 1.4 million and Accra 1.9 million making them the two largest cities and commercial centers in the country (Worldometers, 2021). Besides the economic activities, they are also considered the "center" for most entrepreneurial activities and new venture formations in the whole country.

We followed previous scholarly work on business failure (Cope, 2011) to employ the principles of interpretative phenomenological analysis in both the research design and analysis. The approach advocates a small sample to be collected which allows rich insights to be developed in advancing new theories (Smith, Jarman & Osborn, 1999). Indeed, such a qualitative approach has been found to be particularly appropriate in developing and enriching our understanding of underexplored issues (Lee, Mitchell & Sablynski, 1999). To identify

potential informants, we employed a snowball sampling technique using informal and formal networks within the small business community including local churches, Association of Small-Scale Industries and local associations of small businesses. We were also able to identify these individuals through referral from industry leaders. We contacted only 16 entrepreneurs who agreed to take part in the study. These informants were asked questions about their former business, how it started, who started it, their experiences at founding and their expertise. They were also asked about factors that caused the business failure, actions taken during the declining period, the influence of religion on their operations and strategizing. They were also asked about the role and influence of their belief on the actions taken and the impact on the business. Our discussions on the post-exit experience focused on the effects of failure on their current work/business and retrospective account of the effects of the religion on the actions taken.

We interviewed entrepreneurs with business failure experience to shed light on their expertise and post-exit experiences. The semi-structured interviews were conducted by one of the authors in December 2014 and lasted between 30 and 120 minutes each. We employed the “24 hr” rule to ensure that we transcribed the interview data on the same day (Eisenhardt, 1989; Yin, 2018). Based on the insights from each case, we conducted cross-case analysis examining unique patterns across the cases (Eisenhardt, 1989; Yin, 2018). In order to ensure that the stories are collaborative or well-grounded with began our analysis by first examining each business failure as a standalone case, examining the inner workings of the business, the entrepreneur’s experiences, the process of business decline, steps taken, the effect of religion, and exit and post-exit experiences. The data were analyzed by first developing a case history of each entrepreneur along the dimensions of how the business started, challenges and opportunities, strategies and process. We then compared the stories to deduce commonalities and differences in their stories. Based on these steps, we made the following observations.

3.2 Results

In Study 1, our findings suggest that the influence of religion in shaping the lessons and experiences of business failure. Surprisingly, two of the owners attributed the demise to failure to comply with God's will. The adherence to religious beliefs in decision-making may restrict entrepreneurial firms in the array of options available and actions taken in responding to business decline. For instance, such employers may have greater concern for employees' livelihoods, a lax disciplinary approach, and a limited hire and fire culture. They may not only narrow the range of tools available but also the scope of actions and tools. As one respondent puts it bluntly:

"I benefited from my religion, and it guides all my decisions." (M3)

Because religious values in the workplace are more likely to increase trust and decrease oversight (Koerber & Neck, 2006), there were inherent risks that the high level of trust in the employer-employee relationship restricted owners' ability to take strict actions such as firing employees. On collaboration, one respondent noted:

"I felt it was time to try something different. After two failures, I tried sharing costs with other businesses for delivery trucks and tried to work with other businesses in this locality." (M6)

As another informant noted:

"I cannot accept blame for this (failed venture). My business partner was the problem. There was new taxes and regulations. They all cost money" (M14).

It can be deduced the individual could be dissuaded from collaboration following such experience. Another added the following on the learning and the potential positive effects of failure experience:

"I think my strength now is that I can find good business partners in Kumasi." (M2)

In reflecting the experiences in two failed ventures, as one informant noted:

“I started two businesses and the fire destroyed them. The goods and everything were ruined. You have to look ‘above’ for explanation”.

Insert Table 1 about here

The findings from our semi-structured interview and survey largely show that religion is more likely to develop, curtail and respond to early warning signs of decline. Our fieldwork indicates that some of the entrepreneurs attributed their failed businesses to failure to fully apply their religious or Christian values or “Godly principles”. The impact manifests in day-to-day running of the firms in terms of norms and routines. As one informant concurred:

“People [entrepreneurs] regularly make mistakes because we leave what we learn from going to church on Sundays at church and not apply them to the business” (M13).

Table 1 presents some illustrative quotes from the interview data and their corresponding hypothesis. Accordingly, family, faith and collaboration are key features of many small businesses. Using the semi-structured interview with the entrepreneurs, the new items were generated.

4. Study 2: Quantitative

4.1 Sample and data collection

This study draws on data collected from manufacturing ventures (i.e., low-tech, and high-tech ventures) in Ghana as these ventures play a critical role in the Ghanaian economy (Adomako, Danso, Boso, & Narteh, 2018). We developed the list of entrepreneurs from the Ghana Business Directory (Ahsan, Adomako, & Mole, 2020). We selected entrepreneurs who had actively taken part in the foundation of the manufacturing venture.

To get the participants' attention, we sent letters to each venture's founder explaining the purpose of the study and requested their cooperation in responding to the questionnaire. In order to enhance response of the survey and obtain reliable and accurate responses, the entrepreneurs were promised a summary of the results of the study they provided their email addresses. We also promised the entrepreneurs anonymity.

Two weeks after the letters had been sent to each venture, the questionnaires were distributed by visiting the offices of the selected ventures. The following criteria were used to select the entrepreneurs for the study. First, the entrepreneurs were classified as those who had taken part in the foundation of the business (Adomako, 2021; Cardon & Kirk, 2015). Second, consistent with prior entrepreneurship studies (Cope, 2011; Liu, Li, Hao & Zhang, 2019), we differentiated business failure from business closure (i.e., the voluntary termination of a firm for reasons other than poor performance). To reduce retrospective bias, the survey was further limited to entrepreneurs with failure experience in the most recent three years. Thus, we focus on entrepreneurs' failure experience during the 2016 to 2018 period (Boso et al., 2019; Liu et al., 2019). Using a three-year time period allowed us to examine entrepreneurial collaboration after the business failure had occurred. Third, given that different industries possess different competitive landscapes and have different types of entrepreneurs, we only focused our survey on entrepreneurs in the manufacturing industry. This helped in controlling for the unobserved variation among entrepreneurs in different industries.

Based on these criteria, we selected 931 entrepreneurs who had business failure experience and had founded new ventures. We collected data in person by approaching the 931 entrepreneurs with a questionnaire. If the entrepreneur had more than one business failure experience, we asked him/her to report on the most recent failure. In order to mitigate the effect of time-varying factors, we conducted the survey within three months.

We approached all of the 931 entrepreneurs (founders of new ventures) and received 479 questionnaires. The 452 entrepreneurs who did not respond cited company policy barring them

from taking part in surveys. We excluded 58 responses from our study for the following reasons. First, following a follow-up call, it transpired that the entrepreneur had no business failure experience or was not an entrepreneur. Second, the respondent was not reachable when we called back to check the status of the entrepreneur. Third, we excluded responses with missing values. Fourth, we collected data on the entrepreneurial profile of the ventures by using the entrepreneurial profile questionnaire developed by Palich and Bagby (1995). The main purpose of the entrepreneurial profile data was to establish whether the ventures (1) create new products; (2) introduce new methods of production; (3) sustain growth; (4) open new markets; and/or (5) generate profit in the last three years. In addition, we asked the entrepreneurs to indicate whether they own at least 50% ownership of the ventures. After the data verification procedure, we obtained a total of 421 complete responses, representing a 45.22% response rate.

4.2 Variables and measures

Unless otherwise stated, all constructs were measured using a 7-point Likert scale.

Business failure experience. To capture business failure experience, we relied on data from interviews and the extant literature. Consistent with existing studies, business failure was conceptualized as the closure or selling of a business by the entrepreneur due to bankruptcy, liquidation, non-performance or failure to meet the entrepreneur's expectation (Boso et al., 2019; Ucbasaran et al., 2010). Accordingly, we asked respondents with a minimum of one prior business failure experience to complete the questionnaire. Thus, we deduced the business failure experience by asking the entrepreneurs to report the number of failed businesses they had owned (Boso et al., 2019; Ucbasaran et al., 2010).

Entrepreneurial collaboration. The question of whether to team up with other potential entrepreneurs or to go solo in the formation of business is an important issue for potential entrepreneurs. To capture entrepreneurial collaboration, we followed precedence in generating items to capture a construct (Boso, Adeleye, Donbesuur, and Gyensare, 2019; Liu,

Li, Hao, and Zhang,2019). Accordingly, we relied on data from the interviews and the extant literature to capture collaborative activities. The three items capture the extent to which entrepreneurs would collaborate or team up with other potential when setting up a new business. We employed exploratory factor analysis (EFA) with the principal component analysis with varimax rotation specifying one factor for the entrepreneurial collaboration scale.

Entrepreneurs' religious orientation. Entrepreneurs' religious orientation was conceptualized as a measure of an entrepreneur's dedication, commitment and involvement in his/her religion (De Noble, Galbraith, Singh & Stiles, 2007). We used five items derived from the literature and interviews to capture entrepreneurs' religious orientation. Overall, we inspected one factor (with eigenvalue greater than one) which accounted for 66.56% of the total variance. All loadings were greater than 0.40 (Table 2).

Family versus non-family status. Family versus non-family firm status was captured as 1 = family firm and 0 = non-family firm. What constitutes a family firm has been debated in the entrepreneurship literature over the years (Chrisman et al., 2005; Sirmon et al., 2008). In this study, we define a family firm as a firm in which family members influence the strategic decision-making (Sirmon et al., 2008). To identify family firms, this study followed previous research (Boling, Pieper & Covin, 2016) and selected firms in which the founder or one or more of his or her relatives maintain an ownership position. All other firms are designated as non-family.

Insert Table 2 about here

Control variables. We controlled for several variables that could have influence on our research model: firm age, size, gender, entrepreneurs' age, entrepreneurial experience, education, market scope, environmental munificence, and industry. Firm size was controlled using the number of full-time employees. Firm age was the number of years the firm has been in business since its incorporation. Gender was coded as 0 = male and 1 = female. Entrepreneurial

experience was captured using the number of previous ventures founded by the entrepreneur (Stuart & Abetti, 1990). Accordingly, a single survey item asked the respondents to state the number of previous ventures prior to starting their current business. We received responses from 0 to 6 (Hmieleski & Baron, 2009). Entrepreneur's age was measured as the number of years of age of the entrepreneur, and the entrepreneur's educational attainment was coded as 1 = "high school", 2 = "Higher National Diploma", 3 = "bachelor's degree", 4 = "master's degree" or 5 = "doctoral degree." We controlled for market scope with a dummy variable describing whether the business is locally/regionally traded (coded as 0) or internationally traded (coded as 1). In addition, we controlled for environmental munificence with a four-item scale developed by Baum and Locke (2004).

Finally, we added nine industry groupings and categorized them as "high tech", and 'low-tech' ventures. Specifically, we included manufacturing ventures engaged in (1) petroleum, chemical, polymer and rubber products; (2) non-metallic mineral products; and (3) metal products. These industries were categorized as 'high technology' ventures. In addition, we sampled ventures that are engaged the following activities: (1) food, beverage and tobacco products; (2) textile, leather, clothing and footwear; (3) wood and paper products; (4) printing; (5) transport machinery and equipment; and (6) furniture and other manufacturing. We categorized these industries as "low-technology" ventures. Accordingly, high-technology industries were coded as "1" and low-technology industries were coded as "0"

Insert Table 3 about here

4.3 Potential bias, validity and reliability

We addressed non-response bias by comparing the respondents with non-respondents for the final sample. Using Pearson's chi-square test for categorization (Greenwood & Nikulin, 1996), results indicated that the respondents were not significantly different from the non-respondents in terms of firm size, firm age, founder's age, and gender. Information on these variables were

obtained from the database (Ghana Business Directory) used for sampling frames. Thus, non-response bias is not considered a serious threat to our results (Armstrong & Overton, 1977; Rogelberg & Stanton, 2007).

Since our data come from a single informant, there is a possibility of potential common method variance caused by a common source or social desirability (Podsakoff et al., 2003). To address concerns related to common method bias, we (1) conducted a pilot study to check whether items are subject to ambiguity, (2) promised to protect the anonymity of the respondent in the survey, (3) used different response formats such as a Likert scale for entrepreneurial collaboration, and religious orientation, and dummy variable for family vs. non-family firms, and (4) placed the dependent and the independent variables in different locations of the survey. Procedures 3 and 4 can both help decrease the respondent's incentive to use previous responses to answer subsequent questions (Liu et al., 2019). Statistically, we assumed a conservative single-method bias, using a confirmatory factor analysis (CFA) to test three alternative hierarchically nested measurement models (Cote & Buckley, 1987). Table 3 presents the descriptive statistics and correlations, and Table 4 presents common method bias nested models.

In Model 1, we estimated the method-only model in which all indicators were loaded on a single latent factor. Model 2 was a trait-only model in which each indicator was loaded on its respective latent factor. Finally, Model 3 was a method and trait model involving inclusion of a common factor linking all the indicators in Model 2. A comparison of the three models indicates that Model 2 and Model 3 are superior to Model 1, and that Model 3 is not substantially better than Model 2. Conclusively, we assumed that the variance in the entrepreneurs' responses can be explained by the simultaneous effect of traits, method and random error. This shows that common method bias does not sufficiently describe our data.

Insert Table 4 about here

We used LISREL 8.5 and the maximum likelihood estimation technique to examine all scales in confirmatory factor analysis (CFA) of our measurement model. The CFA was designed to detect any problematic indicators of our constructs. Following purification, several items were removed from the model. The results of the CFA showed that alpha reliability, composite reliability and discriminant validity of the variables are acceptable. Thus, we obtained indices that exceed the minimum cut-off criteria of 0.70, 0.60 and 0.50 respectively (Bagozzi & Yi, 2012). In addition, we affirmed convergent validity of the scales because each factor loading exceeded the suggested cut-off value of 0.40 and was significant at $p < 0.001$ (Anderson & Gerbing, 1988). Exact model fit was then assessed using the chi-square (χ^2) test. Following previous scholarly developments (Bagozzi & Yi, 2012), several approximate fit heuristics were also assessed to serve as additional information on the model fit. We obtained fit indices that ranged from very good to excellent, demonstrating a good fit (i.e., RMSEA = 0.04; NFI = 0.97; CFI = 0.98), except the $\chi^2 = 459.49$ ($df = 109$; $p\text{-value} = 0.00$) which was significant at the 1% level. Finally, we calculated the square roots of average extracted (AVE) for all multi-item constructs. The results show that, for all constructs, each correlation of one construct with another is smaller than the square root of its AVE, indicating discriminant validity for our measures (Fornell & Larcker, 1981).

4.4 Hypothesis testing and results

In this study, we used standardized hierarchical regression analyses to test our hypotheses. Before testing the hypotheses, we examined the following regression assumptions: equality of variance, independence of the error term and the normality of the residual. In addition, we examined the variance inflation factor (VIF) of the regression models and found that the largest VIF was 3.08; suggesting that we did not violate the assumption of multicollinearity (Neter, Wasserman & Kutner, 1990).

The results of the hierarchical regression are reported in Table 5. In Model 1, we examine the effect of the control variables on entrepreneurial collaboration. Model 2 adds the moderating effect variables. The results indicate that both family vs. non-family and religious orientation impact on entrepreneurial collaboration ($p < 0.05$ family vs. non-family firms, and $p < 0.10$ for religious orientated entrepreneurs). Hypothesis 1 stated that business failure experience is positively related to entrepreneurial collaboration. We test H1 in Model 3 and find support for this hypothesis ($\beta = 0.14, p < 0.05$).

To test the moderating hypotheses, used subgroup regression analysis to examine these hypotheses (Aulakh, Kotabe & Teegin, 2000). In Table 5, we present the results of the subgroup analyses undertaken to examine the moderating hypotheses (4a–5b). In Model 4, we examine the effect of business failure experience on entrepreneurial collaboration between family vs. non-family firms. The findings indicate that the beta coefficient for the impact of business failure experience on entrepreneurial collaboration is significant and positive for non-family firms ($\beta = 0.43, p < 0.01$) but not significant for family firms ($\beta = 0.04; ns$). Using *t*-test analysis, we find that the coefficients are significantly different ($t = 2.65, p < 0.05$). Thus, H2 is supported.

In Model 5, we examine the influence of business failure experience on entrepreneurial collaboration among firms led by religious vs. non-religious-oriented entrepreneurs. The findings indicate that the beta coefficient for business failure experience for firms led by non-religious entrepreneurs was positive and significant ($\beta = 0.36, p < 0.01$) but non-significant for firms led by religious-oriented entrepreneurs ($\beta = 0.03; ns$). Using *t*-test analysis, we found that the coefficients are significantly different ($t = 1.92, p < 0.05$). Thus, Hypothesis 3 received support.

4.5 Robustness analyses

To substantiate the robustness of the results, we performed additional analyses. First, the same

moderated regression analysis models used to test hypotheses 2 and 3 were run repeatedly with randomly chosen subsets of the sampled firms, from 90% of the sample down to 50% of the sample (Boling, Pieper & Covin, 2016). The results relating to hypotheses 1 and 2 remained statistically significant at $p < 0.05$ level or better, suggesting that the results are robust to alternative explanation. Second, we investigated potential selectivity bias following the procedure specified by Heckman (1977). According to the logic of this procedure, if the firms included in this study differ significantly from those not included, and if the control variables are not able to capture these differences, the models could produce spurious results. Accordingly, we regressed a *probit response* model on the variables included in an OLS regression. We then generated an inverse Mills' ratio and included this ratio as a control in our subsequent models. We found non-significant selectivity bias indicators, and in no case was the net effect of institutional support negative. These results signify that our study does suffer from selectivity bias. Finally, we tested an alternative model by adding environmental dynamism as an additional control variable. Noticeably, the results were in line with our initial findings. This indicates that the results presented in this paper are robust to alternative explanations (Stam, 2010).

Insert Table 5 about here

5. Discussion and conclusion

In this study, we conducted a two-part study to examine the effect of business failure experience on entrepreneurial collaboration. Using insights of serial entrepreneurs in Ghana, we found support for our hypothesis that the experience of business failure influences serial entrepreneurs to seek collaborative arrangements in the formation and running of successive ventures. Thus, business owners with failure experience are more likely to engage in such alliances and the impact of entrepreneurial collaboration was stronger among non-family firms than family firms. A possible explanation is that collaborative activities generally denote

sharing of resources, risks, expertise resource combinations and sharing profitable. For many SMEs, family-ownership status may provide them access to additional resources within other family members which might not be available to non-family firms.

Our research also revealed that the impact of business failure experience on entrepreneurial collaboration was stronger among firms led by non-religious oriented entrepreneurs than religious-oriented entrepreneurs. One possible explanation for this may be that many religions tend to emphasize collaboration and a supportive atmosphere rather than divisiveness. Regarding firms led by non-religious oriented entrepreneurs, religious individuals may tend to have community support and other members of their religion to turn to for additional support. Thus, it might be that these resources available to religious oriented entrepreneurs help them to neutralize some of the negative effects of prior collaboration. Considering inconsistent findings on the effects of business failure, our study provides support for the contention that failure experience can be turned into a positive and fosters development of collaborative capabilities.

5.1 Theoretical contributions

Our findings allow us to make three key theoretical contributions to the entrepreneurship literature. First, we extend the current entrepreneurial business failure literature (Amankwah-Amoah, 2016; Lin & Wang, 2019; Ucbasaran et al., 2010) by providing evidence related to whether business failure experience is a motivating or inhibitory factor of entrepreneurial collaboration. Whilst extant studies have examined how business failure experience spurs entrepreneurial learning (Amankwah-Amoah & Syllias, 2020; Boso, et al., 2019; Liu et al., 2019), our understanding related to the effect of business failure experience on entrepreneurial collaboration is not well developed. Thus, unlike previous studies, our study finds that business failure experience positively relates to entrepreneurial collaboration. This new result offers empirical support to the growing assumption in the business failure literature

that business failure experience may provide opportunities for entrepreneurs (Cope, 2011; McGrath, 1999). Thus, we extend the business failure literature by shedding light on how entrepreneurs' failure experiences relate to their collaboration with other entrepreneurs. Second, our study proposes that the degree of family orientation may facilitate the degree to which business failure experience affects entrepreneurial collaboration. Results from the study indicate that the influence of business failure experience on entrepreneurial collaboration is more amplified in non-family firms than in family firms. A major theoretical extension is that when the entrepreneur is leading either of these two different types of businesses – i.e. a family or non-family firm – he/she is likely to face different kinds of pressure to pursue different entrepreneurial activities.

Third, we propose that the effect of entrepreneurs' business failure experience on entrepreneurial collaboration is conditional on religious vs. non-religious orientation. Indeed, insight into religious-oriented entrepreneurs is not well developed in the entrepreneurship literature. Findings from our study show that the effect of business failure experience on entrepreneurial collaboration is more positive in non-religious-oriented firms. A theoretical extension is that religious values tend to be associated with biased attitudes and behaviors that can hamper the effect of business failure experience on entrepreneurial collaboration. This finding supports the view espoused by Chan-Serafin et al. (2013), which suggests that religious beliefs may alter the patterns of entrepreneurs' attitudes by enhancing or weakening relationships with others. Thus, our findings indicate that the benefits of entrepreneurs' learning from failure are enhanced in firms led by non-religious entrepreneurs.

5.2 Practical implications

Beyond the theoretical contributions, our study provides two practical implications for entrepreneurial managers. First, the findings from the study indicate that business failure experience allows entrepreneurs to collaborate with other business peers. This highlights that

business failure experience triggers learning from failure which encourages sharing of resources, expertise and ideas in successive entrepreneurial ventures. Accordingly, entrepreneurs would be well served to view business failure as a source of learning and opportunity to forge more productive collaborations in the venture. A major implication is that business failure should be considered a learning curve that can help entrepreneurs benefit from new opportunities. Thus, business failure should not be viewed as a bad experience but a learning opportunity and a chance to collaborate with other peers. Second, business failure experience may assist entrepreneurs to succeed in new ventures because the learning that takes place after failure is critical for entrepreneurs to succeed. An implication is that entrepreneurs should continuously learn from their experience and search for new opportunities for success. Thus, instead of viewing business failure as a stigmatizing event, serial entrepreneurs in such developing nations would be well served to utilize such experience to seek new knowledge and utilize collaboration to overcome their personal and professional weakness. Our study also suggests a need to leverage insights on how firm owners proactively scan the business environment and use their business failure experience as a source of learning and opportunity to foster competitive strategies based on collaboration.

6. Limitations and future directions

Despite using both qualitative and quantitative methods, there are some limitations stemming from our analysis and approaches. First, although our use of purposive judgement and direct referral helped to gain the confidence of some informants, it must be noted that former business owners are often reluctant to talk about failure of their former businesses and consequences (Mellahi, 2005). There is also a possibility that former business owners who attribute their failure to departure of a partner or co-owner may be less likely to engage in collaborative ventures. Future studies should shed more light on this issue. In addition, our overall sample is still too small and therefore represents an opportunity for future research to expand the

geographical scope. Future research can broaden the scope of this study by focusing on multiple countries in Africa and other emerging economies. Moreover, given that our study is based in an institutional environment where culture and religion play an influential role in entrepreneurial decisions and individuals' lives, it is extremely difficult to generalize our findings to a developed country setting. In this sense, it is noteworthy that we covered relatively few areas in Ghana and the responses might have been influenced by cultural cognitions. Another caveat of our study is that we largely considered collaboration as entailing shared ownership, which is a dimension of collaboration. Our findings indicate that failure experience can have a positive effect on these types of collaboration (e.g. focusing on teaming up with others and setting up a new business), but not necessarily in sharing ownership. Finally, our study did not control previous collaboration by entrepreneurs. This could influence entrepreneurial collaboration. Thus, we encourage future studies to control prior collaboration experience. Overall, we hope that our study will spur additional studies on business failure and entrepreneurs' collaborative activities.

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Table 1. Illustrative quotes from the interviews

Dimension	Some illustrative quotes from the interviews	Aggregated dimension and dimension
Potential facilitators and barriers to entrepreneurial collaboration after business failure (Hypothesis 1)	<p>“My life was turned upside down and I moved from a profitable business owner to become a destitute ... I am not sure I can trust business partners again.” (M2)</p> <p>“In the midst of it all, I am not able to do my own stuff.” (M8)</p>	Entrepreneurial collaboration items
Effects on non-family and family background (Hypothesis 3)	<p>“I placed my trust in a family member and he let me down and destroyed the business ... he used our money for personal matters.” (M6)</p> <p>“I have a very close family and family members always help me and some work here.” (M9)</p> <p>“I am happy with my business partner (after business failure) and we try to work closely together.” (M11)</p>	Entrepreneurial collaboration items and family dimension
Effects of religion on the decision (Hypotheses 2 and 3)	<p>“The fire came in the middle of the night ... the fire service was called but they were not able to save much of the business. Unfortunately, my shop was one of them ... it was a lesson from God, and He guides my decisions.” (M10)</p>	Religious orientation items

Note: M used to denote the number of informants/respondents.

Table 2. Factor analysis for religious orientation and entrepreneurial collaboration^a

Scale and item	Factor 1	Factor 2
<i>Religious orientation</i>		
I see myself as religious.	0.79	-0.02
I see a clear link between my religion and business decisions, routines, norms and approaches.	0.84	0.04
I regularly go out of my way to do things in line with my religion.	0.86	-0.03
I think my failed/collapsed business was founded with religious values.	0.79	-0.01
I feel that consumers were more inclined to do business with me because of my religion affiliation.	0.74	0.04
<i>Entrepreneurial collaboration</i>		
I have started this business on my own (r).	0.05	0.89
I am more likely to collaborate with other businesses in the future.	0.03	0.88
I am currently collaborating with local partners/entrepreneurs.	0.02	0.85
Eigenvalue	4.33	2.55
% of variance explained	39.22	27.34
Cumulative % of variance explained	39.22	66.56

^a The principal component analysis with varimax rotation was used. Each factor loading was greater than 0.40.

Table 3. Descriptive statistics and correlations

	Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12
1.	Firm size (Employees)	14.03	9.20												
2.	Firm age (years)	5.32	0.99	0.14*											
3.	Gender	--	--	0.09	0.00										
4.	Prior founding experience	0.93	1.32	0.02	-0.09	-0.10									
5.	Entrepreneur's age	41.70	9.21	0.14*	0.06	-0.23**	0.28**								
6.	Education	2.95	1.22	0.10	0.04	0.12	-0.09	0.10							
7.	Market scope	--	--	0.22**	0.11	0.06	0.12	0.15*	0.00						
8.	Environmental munificence	4.54	1.12	0.08	-0.06	0.14*	0.01	0.05	-0.04	-0.22**					
9.	Industry (1=high-tech; 0=low-tech)	--	--	0.06	-0.05	-0.03	0.11	-0.02	0.04	0.14	0.13				
10.	Family vs. non-family status ^a	0.43	0.51	-0.17**	-0.29**	0.02	0.07	0.04	-0.09	.010	0.02	0.06			
11.	Religious orientation	4.90	1.11	-0.11	-0.15*	-0.15*	-0.06	-0.09	-0.23**	-0.07	0.00	0.01	0.04		
12.	Entrepreneurial failure experience	4.70	1.84	0.06	0.03	0.07	0.39**	0.20*	0.01	0.05	0.01	-0.02	-0.08	0.00	
13.	Entrepreneurial collaboration	4.17	1.18	0.19**	-0.10	0.08	0.08	0.18*	0.12	0.13	0.11	-0.02	0.09	0.10	0.14*

* $p < 0.05$; ** $p < 0.01$. ^a Dummy variable 0 = if family; 1 = non-family

Table 4. Common method bias nested models: goodness-of-fit statistics

Model	χ^2	Df	χ^2/df	RMSEA	CFI	NNFI
M1: Trait	340.82***	186	1.83	0.17	0.59	0.35
M2: Method	339.90***	152	2.23	0.04	0.95	0.94
M3: Trait-method	403.61***	145	2.78	0.05	0.99	0.97

*** $p < 0.001$. df, degrees of freedom; RMSEA = root mean square error of approximation; CFI = comparative fit index; NNFI = non-normed fit index

Table 5. Regression results for effect of business failure experience on entrepreneurial collaboration and sub-group analysis of the moderating effects

Variables	Dependent variable: Entrepreneurial collaboration (N = 421)						
	Model 1	Model 2	Model 3	Model 4a	Model 4b	Model 5a	Model 5b
<i>Control variables</i>				Family firms (N = 220)	Non-family firms (N = 201)	Religious entrepreneurs (N = 240)	Non-religious entrepreneurs (N = 181)
Firm size (employees)	0.16***	.16***	0.17***	0.14**	0.16***	0.11	0.05
Firm age (years)	-0.11*	-0.10*	-0.11*	-0.11*	-0.09*	-0.14**	-0.07*
Gender	0.09*	0.09*	0.08*	0.08*	0.04	0.03	0.04
Entrepreneurs' age	0.05	0.06	0.07*	0.05	0.09*	0.08	0.07
Prior founding experience	0.04	0.05	0.06	0.04	0.03	0.01	0.05
Education	0.03	0.03	0.05	0.04	-0.05	0.06	0.03
Market scope	0.04	0.05	0.08*	0.09*	0.06	0.04	0.08*
Environmental munificence	0.02	0.03	0.04	0.04	-0.06	0.04	-0.05
Industry (1=high-tech; 0=low-tech)	-0.04	-0.03	-0.03	0.05	0.04	0.02	0.03
Family vs. non-family		0.14**	0.14**				
Religious orientation		0.12*	0.11*				
Entrepreneurial failure experience			0.14**	0.04	0.43***	0.03	0.36***
<i>Model fit statistics</i>							
Model F	3.17**	5.35***	7.14***	3.13**	11.17***	2.18*	10.65***
Adjusted R ²	0.17	0.27	0.32	0.16	0.42	0.13	0.38

*** $p < 0.01$, ** $p < .05$, * $p < 0.10$

