Pro-activeness and its effect on the survival of family-owned manufacturing companies in Kigali City, Rwanda

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ABSTRACT

The chance of survival of businesses in Rwanda is underprivileged, and 82% of them close at an early stage, which negatively affects manufacturing companies, particularly Family-Owned Manufacturing Companies (FOMCs). Although there are other reasons why many FOMCs do not succeed in the next generation, a lack of pro-activeness has surfaced as a critical factor. Thus, the study aimed to assess the effect of pro-activeness on the survival of family-owned manufacturing companies in Kigali City, Rwanda. The study was conducted in Kigali City from 2017 to 2023. Cochran’s formula was employed to determine a sample size of 384 senior employees picked at random from 77 FOMCs. This study employed Self-administered questionnaires and a quantitative approach. Multiple linear regression analysis was utilized to find out the relationship among variables. IBM (International Business Machines Corporation) SPSS (Software Package for Social Sciences) was employed to analyze data. The findings of this study indicated that pro-activeness has a substantial influence on the survival of family-owned manufacturing companies. The study offers a cogent explanation of the relationship between the longevity of family-owned manufacturing companies and pro-activeness. The study also offers important insights into the smooth and effective execution of pro-activeness for the survival and continuity of family-owned manufacturing enterprises. Moreover, the study findings indicated that combining pro-activeness and training the successors boost the productivity of family-owned companies and make them more competitive in the market, which leads to the long-term survival of FOMFs. The FOMFs that use pro-activeness in their operations survive longer than the ones without it.

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Introduction

Being proactive is taking an effort to manage a situation or predicting potential difficulties (Sonntag, 2012). It is taking the initiative and making attempts to control a situation or predict future problems before they occur. Being proactive in responding to clients and the market which is critical for entrepreneurial marketers (Xie et al., 2014). Proactiveness entails taking control of a situation and responding in advance of the future (Vough et al., 2017). It entails more than just reacting to new circumstances and includes planning for and preparing for future stresses and threats (Fuller et al., 2012). Although proactiveness has been shown to have positive impacts, it can also lead to greater stress (Gan & Cheung, 2010). Being proactive in business requires making aggressive and proactive moves, such as providing new products or services ahead of the competition (Brzozowski et al., 2018). Proactiveness entails being proactive in reacting to clients and the market, which is very vital for entrepreneurial marketers. Rather than just reacting to new circumstances, proactive conduct requires taking control of a situation and responding in advance of future events. It also entails planning for and preparing for future challenges and risks.

The motivation of the researcher was to find out the effect of pro-activeness on the survival of manufacturing companies in Kigali City since manufacturing companies play a crucial role in country development also the researcher was motivated by the lower degree
of survival in all businesses especially in manufacturing companies including family-owned manufacturing companies; which seem to be high. The studies show that above 82% of created businesses in Rwanda die at a very early stage, and wished to provide insight of how to make the FOMs survive for the subsequent generation.

Proactivity is considered a vital for overcoming obstacles and attaining success in a variety of industries, including manufacturing firms in Kigali City. Family-owned manufacturing enterprises in Kigali City can improve their chances of survival by employing proactive techniques such as forecasting market trends, exploring possibilities for innovation, and aggressively responding to developments (Iraguha et al., 2022).

Proactive management methods are recognized as critical to the survival of businesses in a volatile business climate, particularly for family-owned businesses (Lozova, 2023).

It also entails detecting and addressing latent consumer desires by accumulating customer and competitor-based data (Xu et al., 2021). A proactive corporation prioritizes proactive ways for dealing with issues above reactive strategies (Sheng et al., 2022). Proactivity is goal-oriented, emphasizing anticipation, initiative, and being prepared for impending uncertainties or dangers (Kim, 2022). Proactive conduct is self-initiated and aims to change organizational work processes (Vough et al., 2017). During the financial crisis, a research on proactive behavior revealed the relevance of appreciating and supporting proactive behavior (Brzozowski et al., 2018). Being proactive is especially crucial for new generation employees since their proactive conduct has a direct impact on an organization's future development (Xu et al., 2021).

Family-owned businesses face a variety of problems in maintaining their existence and success. However, research indicates that proactiveness is important in deciding the outcomes for these businesses. Several research has found that being proactive has a good impact on family firm performance and commercial success (Siënatra & Laudo, 2021; Utami et al., 2021; Naji & Lammz, 2017). Siënatra and Laudo (2021), for example, discovered that pro-activeness had a substantial effect on family firm performance, although other criteria such as innovativeness and risk-taking had no effect (Siënatra & Laudo, 2021).

Moreover, Lozova (2023) stressed the importance of proactive management in the survival of family-owned businesses in a constantly changing business environment. In contrast, it has been proposed that family ownership has a mixed effect on survival and recovery, with a good influence on survival but a detrimental effect on recovery (Iborra et al., 2020). As a result, while family ownership may help to these organizations’ stability, pro-activeness is critical to their long-term survival and success.

Several research studies have looked into the impact of pro-activeness on the survival of family-owned manufacturing businesses. Kwoba and Ebewo (2022) asserted that, pro-activeness, as well as risk management and continual review, are practiced among family-owned manufacturing enterprises. Based on their findings, pro-activeness can help these businesses perform and survive. Similarly, López et al. (2012) emphasize the importance of enhancing competitiveness for survival, noting that environmental proactivity can boost productivity and competitiveness.

These findings, together with empirical evidence from (Chang, 2015), (Ahmad et al., 2020), and (Kayser & Wallau, 2002), suggest that pro-activeness and family participation can contribute to longevity and performance of family-owned manufacturing enterprises. As a result, adopting proactive methods and incorporating the family in company choices and innovative capabilities can improve these organizations’ chances of survival. Based on the sources cited, the impact of pro-activeness on the survival of family-owned enterprises is complicated and context-dependent.

Massis et al. (2013) proposes an S-shaped effect of aging on pro-activeness in family firms. This suggests that pro-activeness may vary over time and could have different effects on survival depending on the stage of the family firm. Siënatra & Laudo (2021) found that proactiveness had a significant effect on family firm performance, indicating that being proactive can contribute to the survival and success of family businesses. Additionally, Utami et al. (2021) found that proactive behavior had a significant and positive effect on the success of family businesses in Indonesia. This suggests that proactiveness can be beneficial for the survival of family-owned companies. Therefore, this study aims to find out the effect of pro-activeness on the survival of family owned-manufacturing companies in Kigali city, Rwanda.

The study was conducted in Kigali City, from 2017 to 2023; Cochran’s formula was employed to determine a sample size of 384 senior employees picked at random from 77 FOMCs. This study employed Self-administered questionnaires and a quantitative approach. Multiple linear regression analysis was utilized to find out the relationship among variables. IBM SPSS was employed to analyze data.

This paper is structured as follows: after the introduction, there is a literature review including theoretical and empirical research that offer light on the relationship between theory and practice. The third section provides context for the research and approach. The authors present views and implications following the study's analysis and conclusions. Finally, major issues, recommendations, future research paths, and limitations are discussed.
Literature Review

Theoretical and Conceptual Background

Nwankwo and Kanyangale (2020) asserted that pro-activity is an EO feature that has had a good and substantial impact on the survival of manufacturing SMEs in Nigeria. The study of Aroyeun et al. (2019) asserted that pro-activity is an important construct of EO that contribute to companies’ growth and survival in Nigeria. Pro-activity has a substantial, direct, and positive significant influence on business survival. Nwankwo and Kanyangale (2020) asserts that pro-activity is the most important factor in predicting the survival of manufacturing SMEs in Nigeria.

The work of Lumpkin and Dess (2001) on the multidimensionality of EO were long-established by Hughes and Morgan (2007) confirmed that pro-activity had a positive influence on business performance and business survival. Therefore, Review and Luka (2019) stated that pro-activity as a dimension of EO refers to the attitude that the company has in comparison with its competitors. Additionally, a proactive firm pursues alteration of the present state and to be amongst the primary to forestall growth tendencies, somewhat than to respond to them consequently. In this logic, Lieberman and Montgomery, (1988) postulated that a proactive company would be able to take a benefit that forerunners have, because, in this way, they will use market opportunities to the best. They have the conviction that pro-activity is the best tactic to contest the competition. The study of Lumpkin and Dess’ (asserted that it would permit companies to make enormous revenues, create a familiar brand, and also safeguard client faithfulness. Lumpkin and Dess (2001) described pro-activity as looking for occasions and as forecasts the forthcoming.

Thus, Pro-activity can merely be reflected as the aptitude to take creativity, every time the situation necessitates it. Vij and Bedi (2012) stated that pro-activity permits companies to proactively hunt for data and resources to encounter predictable demand it is the key to EO because it implies looking in advance. Therefore, proactive firm tends to be fixated on forestalling demand and upcoming wants, which permits them to partake in altering situations and to effect the changes of rivals (Morgan & Strong, 2003). These features allow the firm to attain great performances, but it ought to be renowned in line with Courtyard’s findings that pro-activity would have a resilient effect on enlightening performances in the developing phase of growth for the firm, despite the fact the significance of this measurement is slighter in current companies. Related to innovativeness, which is dedicated to the formation of novel mixtures of products, pro-activity is supplementary dedicated to the creativities assumed in the firm. Patel and D’Souza (2009) found pro-activity as an approach to looking for occasions for novelty, which was also confirmed by this study. Therefore, the ability of the firm to introduce the new product to be proactive in the market, would increase firm performance and gain sustainable competitive advantage, hence, the problem of FOMCs is resolved. These are consequently, the intangible resources that are difficult to imitate and costly to implement by FOMCs, as a result, the FOMF that has sufficient resources to introduce proactive strategy always perform better than the one without and will be more proactive than the ones without.

Empirical Review and Hypothesis Development

The purpose of this study was to see how pro-activity affected the survival of family-owned manufacturing companies in Kigali. One of the characteristics that have been identified as preventing FOMCs from surviving from generation to generation, is a lack of pro-activity. As a result, pro-activity was advocated as one of the solutions for addressing the FOMCs’ poor survival problem. The work of Lumpkin and Dess (2001) on the multidimensionality of EO were long-established by Hughes and Morgan (2007) confirmed that pro-activity had a positive influence on business performance and business survival. Therefore, Review and Luka (2019) stated that pro-activity as a dimension of EO refers to the attitude that the company has in comparison with its competitors. Additionally, a proactive firm pursues alteration of the present state, and to be amongst the primary to forestall growth tendencies, somewhat than to respond to them consequently. In this logic, Lieberman and Montgomery, (1988) postulated that a proactive company would be able to take a benefit that forerunners have, because, in this way, they will use market opportunities to the best. They have the conviction that pro-activity is the best tactic to contest the competition. The study of Lumpkin and Dess’ (1996) asserted that it would permit companies to make enormous revenues, create a familiar brand, and also safeguard client faithfulness. Lumpkin and Dess (2001) described pro-activity as looking for occasions and as forecasts the forthcoming. Basing to research, pro-activity is a critical factor in the survival and profitability of family-owned manufacturing businesses. Considering study conducted by Westhead and Howorth (2006), pro-activity in innovation and adaption techniques is positively associated to the lifespan and profitability of family businesses. Furthermore, Zahra and Hayton (2008) did a meta-analysis of several research and indicated that proactive behaviors, such as strategic planning and market orientation, are strongly connected with family-controlled enterprises’ long-term survival. As a result, it is evident that pro-activity is a critical component for the survival of family-owned manufacturing enterprises, and there is evidence to back this up. Several studies have looked into the relationship between pro-activity and the survival of family-owned manufacturing businesses. According to Massis et al. (2013), pro-activity in family businesses initially diminishes, then increases, and then declines again as the family business ages. When administrative control is distributed among numerous family members, this link becomes more pronounced. Basing on the study of Sienatra and Laudo (2021), pro-activity has a considerable impact on family enterprise performance. Iborra et al. (2020) discovered evidence that family ownership plays a positive influence in survival. Furthermore, Mustikarin (2017) discovered that entrepreneurial activities, including pro-activity, can impact the survival of family businesses. These findings imply that pro-activity is important in the survival of family-owned manufacturing businesses.
The research hypotheses for this study were stated as follows:

Ho: In Kigali City, there is no correlation between pro-activeness and the survival of family-owned manufacturing companies.

Ha2: There is a correlation between pro-activeness and family-owned manufacturing companies' survival in Kigali City.

Research and Methodology

Description of the study area

Rwanda has five provinces, Kigali City is one of five provinces of Rwanda, located in Rwanda's middle region (Manirakiza et al., 2019). Kigali is Rwanda's capital and largest city, having been founded in 1907 as a German colonial outpost and trading hub. It evolved into a commercial centre throughout time. Kigali is currently regarded as Africa's cleanest metropolis and the country's largest urban agglomeration.

Over the last decade, the population has risen from 1, 132, 686 to 1, 631, 657 people, covering an area of 730 km2 (NISR, 2012, 2018). In terms of economic potential and infrastructure development, Kigali is one of Africa's fastest-growing cities (The World Bank, 2018). This economic transformation has resulted from structural changes in business policies that contributed to the vibrant Public-Private Partnerships (PPPs) development. Apart from many economic activities such as infrastructure booming for instance many hotels have been built such as Marriot Hotel, and Kigali convention centre.

In only one decade over 700 investors have invested in Kigali. To attract more new investors and boost the manufacturing sector, Kigali has established a specific site for manufacturing companies, currently known as the Special Economic Zone (SEZ) (Good fellow, 2017; MINICOM, 2018; Trade, 2020). Kigali City being the centre of trade contains the highest percentages of all established companies including FOMCs, it contains over (23.1%) of all established companies and more than 50% of manufacturing companies in Rwanda.

The study was conducted in Kigali city province since it has the highest percentages of companies including FOMCs and is the only province that has an operating Special Economic Zone in the country (NISR, 2017, 2018). The province is also the biggest cause of foreigner exchange to finance, leading to the importation of manufacturing inputs and exporting manufactured products through Kigali international airport, Magerwa were house and NAEB (Technology, 2014; Minicom, 2018, 2020).

Following the national administrative system established in 2005, the city is today divided into various administrative bodies. The entities are organized from the national level down to the province, district, sector, cell, and village (Rwanda, Organic Law No. 29/2005). Kigali is divided into three districts at the provincial level: Gasabo, Kicukiro, and Nyarugenge. These three districts are divided into 35 sectors and subdivided into 161 cells and 1, 061 villages. All three districts of Kigali city were included in this study to give all FOMCs an equal chance to participate in the study to have reliable information.

![Figure 1: Kigali special economic zone](image)

Study population

The population of the study were CEOs, directors, managers and family business owners, CEOs operation in Kigali city.

Sample size

The post-positivist research paradigm was used for this study because it showed a cause-and-effect link between the pro-activeness on the survival of family-owned manufacturing enterprises in Kigali. RBVT (Resource Based View Theory) was the theory that
was discovered and tested to fulfil the research objectives of this study. Cochran's (1977) formula was used to determine the sample size:

\[ n = \frac{Z^2 p(1 - p)}{e^2} \]

Where \( n \) denotes sample size, \( Z \) denotes critical values of appropriate confidence levels (in this case, 1. 96 for a 95% confidence level), \( P \) denotes the proportion of the population of interest (in this case, 50%), \( q \) denotes 1-\( p \), and \( e \) denotes the acceptable margin of error, which is commonly set at 0. 05. Then, \( n = 384 \) respondents.

The sample was drawn from 77 FOMCs. 384 questionnaires were distributed to FOMCs of Kigali City, only 348 were returned. Simple random sampling approaches were used to choose the sample size of 384 respondents from FOMCs based on theoretical and practical difficulties in this study.

**Variables and measurement procedures**

The research needed to know how proactiveness affected the survival of FOMCs in Kigali City. A 5-point Likert scale derived from previous studies was used to evaluate both dependent and independent variables.

**Dependent variable**

FOMC survival was judged using a 5-point Likert scale modified from previous research (Vijfinkel et al., 2011; Vij, S., & Bedi, 2012; Tar et al., 2012; Magasi et al., 2020; Saan, 2020). The scale points ranged from 1 to 5, with 1 denoting significant disagreement and 5 denoting strong agreement and using systematic questions to get an agreement.

**Independent variables**

The independent variables measured was proactiveness. The variable was measured using an adapted 5-point Likert scale adapted from(Miller, 1983; Lumpkin & Dess, 1996; Soares & Perin, 2019; Rauch et al., 2009; Hernández-Perlins & Rung-Hoch, 2017; Elmo et al., 2020). The scale sample points include: starting from =strongly disagree to 5= strongly Agree. Using the structured questionnaire. The questionnaire was divided into three sections: A, B, and C. Sex, age, education level, length of service in manufacturing companies, designation, expected years of retirement, operational years of each FOMF, firm industrial sector, estimated capital, number of workers, and top leader generation were all included in Section A. Section B asked questions on the FOMCs’ survival, which was the dependent variable. The questions in Section C deal with independent variable which is proactiveness.

Data analysis from the questionnaire was assisted by IMB software SPSS Version21 employing data analysis methods such as Chi-square, correlation analysis, and multiple linear regression analysis. Using econometric models, inferential statistical analysis was used to help determine the link between dependent and independent variables. Multiple linear regression analysis proved appropriate for analyzing, testing hypotheses, and drawing conclusions. Nevertheless, before doing multiple linear regression analysis, a correlational analysis was performed to analyze the test multicollinearity concerns among independent variables.

**Results And Discussions**

All six items reflecting proactiveness construct for PA (PA1, PA2, PA3, PA4, PA5, PA6, ) were loaded together and examined to get the Cronbach's alpha coefficient value. As indicated in table 1, the Cronbach's alpha coefficient for PA is 0. 850, which is higher than the threshold value of 0. 7 (sounders et al., 2012), indicating that the measuring instrument used to test the construct Proactiveness is trustworthy.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cronbach’s alpha</th>
<th>N of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA</td>
<td>0.850</td>
<td>6</td>
</tr>
</tbody>
</table>

Although dependability is an important aspect of research quality, it is not sufficient in and of itself to produce high-quality research. As noted in the following section, validity is also critical in guaranteeing high-quality research.

**Validity testing of the measuring instrument**

**Testing for content validity**

For guaranteeing content validity, practitioners and management experts were contacted for a critical analysis of the questions, to make required adjustments to the structure, representativeness, and applicability of the set questions before pilot testing (Saunders et al., 2012). The pilot research was conducted with a sample size of 30 respondents to see whether the questionnaires would perform
well since Saunders et al. (2012) claim that a sample size of 30 is sufficient for statistical analysis. Furthermore, the questionnaire was translated into Kinyarwanda to help the respondents who did not know English.

Before beginning the full-scale investigation, any difficulties that were discovered were resolved. The difficulties were handled by reorganizing unclear questions, removing extraneous questions, and adding missing vital questions. As a result, the measuring instruments adequately addressed the idea of pro-activeness in FOMCs.

Testing for construct validity

The questions used to measure the constructs were from the measurement scales of prior empirical investigations on the subject. The pre-testing instrument was done on a small scale to meet the construct validity criteria, since just a few members of each of the selected organizations took part in the study. Aside from that, convergent validity was the best method for determining construct validity. Since Westhuizen (2014) used the same technique, Principal Component Analysis (PCA) was used to establish the component loading for the measures of each study concept to ensure construct validity.

Factor Analysis

PCA was used as the extraction method, while direct Oblimin Kaiser Normalisation was used as the rotation method, for factor analysis. According to Yang (2005), rotation is used to intelligently increase psychometric qualities like as validity and provide substantive meaning to derived components. Conferring to Leong and Austin (2006), PCA is the most often utilized factor analysis extraction method since its components roughly represent the variances of the observed variables in a much more cost-effective manner. The goal of factor analysis was to see if an individual item loading was more than 0.5, which would indicate construct validity.

On this factor, all six pro-activeness components (PA1, PA2, PA3, PA4, PA5, PA6) were put simultaneously. The results demonstrate that the factor loading for pro-activeness ranged from 0.639 to 0.749, all of which are higher than the threshold value of 0.5, as shown in table 2, indicating construct validity.

<table>
<thead>
<tr>
<th>Item</th>
<th>Item Statement</th>
<th>Comp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA1</td>
<td>My firm usually reacts to rivals' actions and only rarely initiates improvements in their industry.</td>
<td>.735</td>
</tr>
<tr>
<td>PA2</td>
<td>My company is frequently the first to launch new goods, services, administrative approaches, operational technology, and so on.</td>
<td>.655</td>
</tr>
<tr>
<td>PA3</td>
<td>My company normally avoids competitive confrontations by adopting a &quot;live—and—let—live&quot; attitude.</td>
<td>.711</td>
</tr>
<tr>
<td>PA4</td>
<td>For prospects, our company focuses both research and experimentation.</td>
<td>.733</td>
</tr>
<tr>
<td>PA5</td>
<td>In our company, we are always making changes and introducing new ideas.</td>
<td>.729</td>
</tr>
<tr>
<td>PA6</td>
<td>Our company's ways of operating are innovative.</td>
<td>.658</td>
</tr>
</tbody>
</table>

Inferential Analysis

The data from the completed surveys were coded and analyzed using the appropriate statistical technique with the help of IBM software SPSS version 21.0 before the findings were presented. Since Ghee et al. (2015); Kapaya (2017) and Magasi et al. (2020) used the same methodology, this study used both correlational and regression data analysis approaches.

Correlational analysis

Correlational analysis was used to analyze the connection between and among variables without inferring cause and effect (Creswell, 2014). The fundamental hypothesis was that pro-activeness could be linked to FOMC survival. Correlational research is used to examine if there is a link between the variables under investigation. Correlations illustrate the link between variables and whether they move in the same or distinct directions (Creswell, 2014; Westhuizen, 2014). However, correlation does not imply causation.

The association between independent variables and FOMC survival. At the 1% and 5% levels, the symbols ** and * signify statistical significance, respectively. In parentheses, the relevant P-values were listed. Based on data analysis for Pearson correlations, **p 0.01 correlation was significant at the 0.01 level, while *p 0.05 correlation was significant at the 0.05 level.
Outliers are commonly excluded by researchers to boost the accuracy and precision of MLR models, according to Tabachnik and Fidell (2007, referenced in Taruwinga, 2011), hence eleven (11) examples of outliers were removed before data analysis. Anderson (1992) also states that data with no outliers have standardised residuals in the range of 3 that a normal distribution would predict. Outliers' testing results are shown in Table 6.

### Table 3: Correlational Analysis

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>PA1</th>
<th>PA2</th>
<th>PA3</th>
<th>PA4</th>
<th>PA5</th>
<th>FOMCs</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA6</td>
<td>.</td>
<td>.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA5</td>
<td>.</td>
<td>.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA4</td>
<td>.</td>
<td>.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA3</td>
<td>.</td>
<td>.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA2</td>
<td>.</td>
<td>.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA1</td>
<td>.</td>
<td>.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FOMCs</td>
<td>.</td>
<td>.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*P<.05, **P<.01

Pro-activeness has a favourable (B=0.249) influence on the survival of family-owned manufacturing enterprises, basing on the equation (3-2). Because the observed t value (p=.007) is smaller than the crucial value (p=.05) at the 95 per cent confidence level, Table 4 reveals that pro-activeness in business has a significant influence on FOMC survival. The null hypothesis (Ho2) is thus rejected, whereas the alternative hypothesis (Ha2) is accepted. As a result, corporate pro-activeness has a substantial impact on FOMC survival.

### Multiple linear regression analysis

Multiple linear regressions are put to the test to see if their assumptions are correct.

#### Normality testing

Variables with normal distributions are assumed in regression. To determine the normalcy status, Kolmogorov-Smirnov was used as an inferential test. The distribution of data meets the assumption for regularly distributed data if the Kolmogorov-Smirnov test is negligible (p>.05) (Saunders et al. 2012). Data are regularly distributed, according to the null hypothesis. Table 4 shows the results of the Kolmogorov-Smirnov test.

#### Table 4: Test of normality

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Df</th>
<th>Sig.</th>
<th>Statistic</th>
<th>Df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA</td>
<td>. 287</td>
<td>337</td>
<td>. 085</td>
<td>. 785</td>
<td>337</td>
</tr>
</tbody>
</table>

a. Lilliefors Significance Correction

PA has Kolmogorov-Smirnov values of 0.085. Because the value was more than the crucial value of 0.05, the tested data were substantially regularly distributed. In addition, the standard deviations for PA was 0.962, as calculated from histogram figures 2. The standard deviations for a conventional normal distribution was all extremely near to one, indicating that the data was normally distributed. Table 5 shows that the standard deviations for independent variables were quite close to one.

#### Table 5: The standard deviation for independent variables

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Standard deviation</th>
<th>Normality status</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA</td>
<td>0.932</td>
<td>the distribution is normal</td>
</tr>
</tbody>
</table>
Table 6: Residuals Statistics

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicted Value</td>
<td>-15928205</td>
<td>1.2914642</td>
<td>2276151</td>
<td>.5718330</td>
<td>337</td>
</tr>
<tr>
<td>Std. Predicted Value</td>
<td>-3.183</td>
<td>1.860</td>
<td>.000</td>
<td>1.000</td>
<td>337</td>
</tr>
<tr>
<td>Standard Error of</td>
<td></td>
<td></td>
<td>.044</td>
<td>.076</td>
<td></td>
</tr>
<tr>
<td>Predicted Value</td>
<td>.89</td>
<td></td>
<td>.000</td>
<td>.029</td>
<td></td>
</tr>
<tr>
<td>Adjusted Predicted</td>
<td>-1.5978837</td>
<td>1.2969637</td>
<td>.2263851</td>
<td>.57324737</td>
<td>337</td>
</tr>
<tr>
<td>Value</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>-1.46042087</td>
<td>1.2031107</td>
<td>0E-9</td>
<td>.68714497</td>
<td>337</td>
</tr>
<tr>
<td>Std. Residual</td>
<td>-2.115</td>
<td>1.747</td>
<td>.001</td>
<td>.997</td>
<td>337</td>
</tr>
</tbody>
</table>

Note: Dependent variable: Family–Owned Manufacturing companies Survival (FOMCS)

The standardised residuals were -2.115 (minimum) and 1.747 (maximum), which are both within the anticipated boundaries of 3 for a normal distribution, showing that there were no outliers at either the extreme left or right tails, according to Table 6. A normal probability plot, also known as a normal P-P plot, was used to assess if residuals were normally distributed.

The values of standardised residuals were plotted against expected values from a conventional normal distribution. Because the residuals all fell on the diagonal, they were normally distributed, suggesting that there were no extreme values (outliers). Figures 2, depict the box plots PA.

![Figure 2: The regression standardised residuals are plotted in a normal P-P plot.](image)

Linearity testing

Correlation coefficients and scatter plots were used to evaluate the linearity assumption. Linearity indicates that the correlation between variables is linear, which is true if the bivariate correlations for each pair of independent variables are significant (*p 0.05, **p 0.01 or ***p 0.001). The rest of the bivariate correlations for each pair of independent variables in this study were all significant (*p 0.05, **p 0.01), indicating that the majority of the variables matched the linearity assumption.

Homoscedasticity testing

To check the homoscedasticity assumption, the SPSS Levene test was done to assess whether the variances of a single metric variable were significantly equal across any number of groups (Hair et al., 2010). The null hypothesis stated that the variance of errors is similar across all levels of the independent variables and the alternative hypothesis stated that the variance of errors is not similar across all levels of the independent variables. The findings in Table 7 indicate that the calculated p-value (0.767) is greater than the critical value (0.05). Therefore, the null hypothesis is accepted that the variance of errors is similar across all levels of the independent variables, an indication that the homoscedasticity assumption is fulfilled.
Reliability testing

The variables assessed were subjected to a reliability study to see if they were free of mistakes. As shown in Table 7, the alpha values for PA were 0.850, indicating that the data were trustworthy. Saunders et al. (2012) stated that excellent reliability is defined as an alpha value of less than 0.7.

Multicollinearity testing

To determine if multicollinearity exists, correlational analysis and the Variance Inflated Factor (VIF) were used. The assumption is that no independent variables are coupled in such a way that the estimate of model parameters is destabilized.

All correlation coefficient estimates derived from the correlation between independent variables were between -0.308 and 0.268, as shown in Table 6. As a result, there were very low correlations between independent variables, indicating that multicollinearity concerns were not present. As a result, all of the factors in this study were distinct. However, Hair et al. (2010) contend that correlational analysis does not accurately evaluate the degree to which each independent variable is explained by the set of other dependent variables and that the Variance Inflated Factor (VIF) should be used instead. To assess multicollinearity, the VIF was utilized, and the mean value of the VIF should be less than 5. (Hair et al., 2010; Kapaya, 2017). As shown in Table 8, all VIFs were between 1.028 and 1.232, indicating that multicollinearity was not present. Furthermore, the mean VIF value for independent variables was 1.119, indicating that multicollinearity issues were not present.

Table 8: Multicollinearity diagnostic using VIF

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
<th>Tolerance (1/VIF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA</td>
<td>1.232</td>
<td>0.850</td>
</tr>
</tbody>
</table>

In addition, as shown in Table 8, the tolerance (1/VIF) for PA, which is the proportion of the variation in a particular predictor that cannot be explained by the other predictor, was 0.850. The fractions was close to 1, indicating that all predictors were substantially self-explanatory, indicating that there was no difficulty with multicollinearity

Multiple Linear Regression Analysis results

Tables 8, 9, and 10 show how PA, affect FOMC survival and are included in equations (2).

Table 9: Overall model fit statistics of multiple linear regressions

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R-Square</th>
<th>Adjusted R-Square</th>
<th>Std. An error in the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.18*</td>
<td>.502</td>
<td>.487</td>
<td>.72437967</td>
</tr>
</tbody>
</table>

Note: a. Predictors: PA1; PA2; PA3; PA4; PA5; PA6; b. Dependent Variables, Family-owned manufacturing companies (FOMC’s)

The regression model fit test for the influence of the independent variable on the dependent variable is evaluated in Table 8. The modified R-square and standard error of the estimate are used to assess the overall model fit (Hair et al., 2010). While R-square implies that every single independent variable explains the variance in the associated dependent variable, adjusted R-square is the best at explaining the proportion of variation in the independent variable. This means that the adjusted T-square statistic assesses the model's overall prediction accuracy as well as the extent to which the model's variables effectively explain variance in the dependent variable.
Table 10: ANOVA F-test in the regression model

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of square</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>119.046</td>
<td>4</td>
<td>29.521</td>
<td>57.874</td>
<td>.003b</td>
</tr>
<tr>
<td>Residual</td>
<td>170.473</td>
<td>354</td>
<td>.520</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>298.499</td>
<td>358</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: a. Dependent Variables: FOMCS; b. Predictors: (Constant), PA1, PA2, PA3, PA4, PA5, PA6

Table 10 shows the coefficients (B) for IN, which was calculated to determine the degree of their impacts on FOMC survival. Holding constant results in a .041 increase in FOMC survival, according to the regression equation (2-2). The ANOVA F statistic was calculated to see if the regression model as a whole was significant; the p-value is 0.003, which is less than the crucial threshold of 0.05, indicating that the six independent factors had a significant influence on the dependent. As a result, the employment of a multiple linear regression model is almost certainly permissible. PA, the independent variables, accurately predicted the dependent variable FOMC's survival.

Table 11: Coefficients of multiple linear regression analysis

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized coefficients</th>
<th>Standardized coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>I</td>
<td>(Constant)</td>
<td>.014</td>
</tr>
<tr>
<td></td>
<td>PA</td>
<td>.017</td>
</tr>
</tbody>
</table>

Multiple Linear Regression Analysis with background variables

Because they are connected to the study’s issue and are also proposed to impact the survival of the FOCs, background factors such as respondents' education (RespEd), firm age (FirmAge), and company size (company's size) were included in the analysis. Tables 11, 12, and 13 present the results.

Table 12: After adding the background variables, the overall model fit statistics are calculated.

<table>
<thead>
<tr>
<th>Model summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>I</td>
</tr>
</tbody>
</table>

Note: a. Predictors: (Constant), PA1, PA2, PA3, PA4, PA5, PA6, Resp Ed, Firm Age, Firm Size; b. Dependent Variable: Family-Owned Manufacturing Companies (FOMC’s)

The findings shown in Table 12 were obtained when the background variables (Resp Ed, Firm Age, and Firm Size) were included in the regression equation. The corrected T-square rose by 20.9 per cent (.612-.497=.115) as a result of the results. In addition, the estimated standard error has decreased by 14.1 per cent (.71437963-.5734426=.141). As a result, the background variables included in the regression model provided a significant contribution to the overall model fit by significantly increasing the adjusted R-square and lowering the standard error of the estimate.
The findings are in line with Lozova, (2023) who confirmed that proactive management methods are recognized as critical to the survival of businesses in a volatile business climate, particularly for family-owned businesses. The findings are also in line with Nwankwo and Kanyangale (2020) who asserted that pro-activeness is an EO feature that has had a good and substantial impact on the survival of manufacturing SMEs in Nigeria. The findings of this study are also in line with Aroyeun et al. (2019) who asserted...
that Pro-activeness is an important construct of EO that contribute to companies' growth and survival in Nigeria. Pro-activeness has a substantial, direct, and positive significant influence on business survival, Nwanwko and Kanyangale (2020) asserts that pro-activeness is the most important factor in predicting the survival of manufacturing SMEs in Nigeria.

The findings are in line with Lumpkin and Dess (2001) on the multidimensionality of EO are long-established by Hughes and Morgan (2007) confirmed that pro-activeness has a positive influence on business performance and business survival. This study is in harmony with Review and Luka (2019) who stated that pro-activeness as a dimension of EO refers to the attitude that the company has in comparison with its competitors.

Therefore, a proactive firm pursues alteration of the present state and to be amongst the primary to forestall growth tendencies, somewhat than to respond to them consequently. In this logic, Lieberman and Montgomery, (1988) postulated that a proactive company will be able to take a benefit that forerunners have, because, in this way, they will use market opportunities to the best. They have the conviction that pro-activeness is the best tactic to contest the competition. The result is also in the line with Lumpkin and Dess’ (1996) arguments that it will permit companies to make enormous revenues, create a familiar brand, and also safeguard client faithfulness. Lumpkin and Dess (2001) describe pro-activeness as looking for occasions and as forecasts fronting the forthcoming.

Lumpkin and Dess (2001) asserted that pro-activeness comprises the introduction of novel products and services in advance of the rivalry, as well as the partaking of a firm in forecasting and replying to the forthcoming wants and requirements of the environment. Pro-activeness can, consequently, patent itself in two ways, violent conduct in contrast with opposing companies, or looking for promising industry chances. Pro-activeness can merely be reflected as the aptitude to take creativity, every time the situation necessitates it. Vij and Bedi (2012) stated that pro-activeness permits companies to proactively hunt for data and resources to encounter predictable demand it is the key to EO because it implies looking in advance. Therefore proactive firm tends to be fixated on forestalling demand and upcoming wants, which permits them to partake in altering situations and to effect the changes of rivals (Morgan & Strong, 2003). These features allow the firm to attain great performances, but it ought to be renowned in line with Courtyard’s findings that pro-activeness will have a resilient effect on enlightening performances in the developing phase of growth for the firm, despite the fact the significance of this measurement is slighter in current companies. Related to innovativeness, which is dedicated to the formation of novel mixtures of products, pro-activeness is supplementary dedicated to the creativities assumed in the firm. Patel and D’Souza (2009) find pro-activeness as an approach to looking for occasions for novelty, which is also confirmed by this study. Therefore the ability of the firm take to introduce the new product to be proactive in the market, will increase firm performance and gain sustainable competitive advantage, hence the problem of FOMCs will be resolved. These are also intangible resources that are difficult to imitate and costly to implement by FOMCs, as a result, the FOMC, which has sufficient resources, will always perform better than the one without and will be more proactive than the ones without.

Conclusion

Proactive businesses invest in research and development to innovate and produce new goods or improve old ones. They actively seek consumer and employee feedback in order to find areas for improvement and to explore new prospects. This assists family-owned manufacturing enterprises in remaining relevant, meeting changing client needs, and distinguishing themselves from competition. Pro-activeness enables family-owned manufacturing businesses to be agile, responsive, and well prepared for the problems and opportunities that arise. These businesses maximize their chances of survival in a fast-changing business environment by actively researching methods to improve and adapt. A lack of proactivity has been found as one of the qualities that prohibit family-owned manufacturing companies from surviving from generation to generation. Pro-activeness is critical to the survival of family-owned manufacturing businesses. As a result, pro-activeness was proposed as one of the remedies to the family-owned manufacturing companies’ dismal survival rate. In addition to foster a proactive culture: Create a work climate that supports proactive behavior at all levels of the business. Encourage staff to look for possibilities, discuss ideas, and express concerns. To perpetuate the ideal culture, recognize and reward proactive activities. The suggestions for the future research, to look into how family values, disputes, and communication patterns influence a person's propensity to be proactive and how this affects firm longevity. They might also examine the significance of pro-activeness in supporting innovation among family-owned manufacturing businesses.

Acknowledgement

Throughout the process of writing this paper, I received various forms of assistance; I express my heartfelt gratitude to all who has contributed to this study. Dr Gwahula Raphael and Dr Salvio Marcha, my supervisors, deserve my sincere appreciation for their wise assistance in the art and science of correctly developing research on a good academic foundation. Throughout this investigation, I appreciate their knowledge, helpful support, insightful opinions, and steadfast dedication.

All authors have read and agreed to the published version of the manuscript.  
**Author Contributions:** Conceptualization, Methodology, Data Collection, Formal Analysis, Writing—Original Draft Preparation, Writing—Review And Editing by authors with equal participation. All authors have read and agreed to the published the final version of the manuscript.  
**Data Availability Statement:** The data presented in this study are available on request from the corresponding author. The data are not publicly available due to restrictions.  
**Conflicts of Interest:** The authors declare no conflict of
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