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The Effect of IPR on the Condition of SMEs Survival; An Empirical Study of 800 SMEs of Company A from 1991 to the End of 2017 in Taiwan

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ABSTRACT

Any powerful treatise comes from qualified enough evidence in Scientific Century 21th. Empirical research can supplement that lack of sufficient evidence to build stronger. There are many topics to discuss how important IPRs (Intellectual Property Rights) or ICs (Intellectual Property Rights Capital) are, but lack of advanced analysis for how separate countable IPRs affect SMEs in detail. We utilize 800 enterprises, which have a real trading record with company A from 1991 to 2017 and have paid tax to government, to analyze above problem through correlations, hypothesis and regression methods. The goal of this research is to supplement existing shortage evidence in details not to argue any questions for any researcher. We hope the outcome of this research can be a worthful and a better reference or guidance for those SMEs, or entrepreneurs, or managers, or government…etc. in the future. We know that power of life comes from the condition of Survival, at the same time, all continuous contribution of SMEs come from the condition of SMEs Survival, too. Here, the major goals of this study are how separate countable IPRs affects the condition of SMEs Survival to support those propositions, what emphasize the importance of IPRs. Finally, we suggest a guideline of IPRs investment priority sequence for those leaders or owners of entrepreneurs, SMEs…etc., who plan to make IPRs investment strategy decision.

Keywords: Intellectual Property Rights, Patent, Trademark, Enterprises, SMEs, Survival, Management.

1   Introduction

Upon the pursuing Development or Innovation of SMEs Profit & Loss (P&L), they must keep on going first. Enterprises, of course, include large SMEs and Small and Medium enterprises. For step 1 of our studies, we try to find many brutal facts, what invalid investment causes them to die? We do not need to admire or envy any ever or going-on splendid enterprises, because the results of the hero must be still alive in advance. If we talk about enterprises, what kinds of important things we shall study in advance, we believe that the condition of survival shall be a relative topic. SMEs (of course, include all large enterprises, following all we call SMEs) are the most important stability and social vitality of a country for almost countries around the world. No one can ignore or deny the contributions of SMEs on their country. SMEs cultivate enough careers opportunities to let the currencies flow fluently, or to let their country promote upgrade, or to compete with other countries. Those contribution and importance information can refer from WTO, European, WIPO. TIPO, SIPO, MOEA, OECD, U.S., that's why we are interested in studying SMEs here, especially for the condition of SMEs Survival. Although there are many propositions to be worth discussing upon SMEs' operation, for instance, business operation, module, strategy…etc. But we will focus on IPRs relative items here, at first.

The relative topics of studying and analyzing Small and Medium Sized Enterprises (SMEs) or Small Business (SBs) are very interesting and very important for themselves own countries, so as to understand their

contribution like their important role in the growth and development of countries, to find any latent problem, to help to solve problem, to give a suitable guidance or support, and to protect secondary social problem, those as having the potential to become significant exporters, to promote economic growth, and to alleviate poverty among various groups in a society (Badrinath, 1997; Badrinath and Kirpal, 1997), having useful guidance for governments, policy makers, SMEs, industry associations and others in devising and evaluating SME policy and program (Wayne Wittig et al, 1998), having continued monitoring the economic conditions having an impact on SMEs and on the SME definition (.European Commission, 2009), having recommended a rationalization of EU programs and increased focus on the financial industries of member states and the EU consider establishing a more visible and effective point of contact for SMEs and VCs, having suggested observed and suggested that smaller enterprises internationalize better step by step from the Uppsala model (Van Den Bulcke, 2003)…etc. Upon the report from Japan, they found that there were 99.7% of all enterprises in the world are SME's and balance 0.30%, are Large. We think we shall know more about SMEs at the first before we discuss them to avoid doing wrong or getting inadequate result. To prevent from diverting the topics of our study in SMEs, we will emphasis to concentrate on the condition of SMEs Survival at first.

According to most statistic data (OECD, WIPO 2012), they find that most contribution of social stability and labor careers, being close to 90%, come from SMEs, but, the most contribution of national tax revenue, being close to 80%, come from huge multi-national companies (HMNCs). Both SMEs and HMNCs have different organization structure, size, scale and operation situation, so, they can do business on their way. All they can face different degree of terrible crisis due to their nature and gene of firms. Especially, for SMEs, there may be no chance for them to make any loss because they have not sufficient resource, like capital, human or others to support themselves. The original gene of SMEs, like knowledge, technology or others, are too lack or shortage to spend more resource or spirit to do uncertainty. All SMEs can do only follow step by step gradually. Why does a firm exist and How does a firm sustain for a long time and What situation does firm need to possess qualify enough to fight his current competitors in actual market? What is the right answer for the last goal of a firm? To make money or to fulfill one's ideal or to let one's dream come true? To suffer lonely struggle during compete rivals in market or to be Invincible? It may be easy for anyone to start a new firm, but how to let this firm sustain long-term competitive with rivals will be a hard working for the key man of this firm. All we know that the first fundamental factors of SMEs survive will depend on their net profit income if the depth of his pocket isn't long enough. Even if long enough, firm may happen to a terrible crisis due to inappropriate decision making for R&D strategy. So, if SMEs are not alive, above all contributions will be closed too. That's why we shall study the condition of SMEs Survival too.

For the firm, resources and products are two sides of the same coin. For SMEs, in order to survive, both side of coin cannot be neglected, but in practice, resources are more important than products, although most products require the services of several resources and most resources can be used in several products. From specifying the size of the firm's activity in different product markets, it can infer the minimum necessary resource commitments. Vice versa, from specifying a resource profile for a firm, it can find the optimal product-market activities. The resource position (strengths and weaknesses) of the firm is phrased by the traditional concept of strategy (Andrews, 1971), whereas most of our formal economic tools operate on the product-market side. While these two perspectives should ultimately yield the same insights, one might expect these insights to come with differing ease, depending on the perspective taken.

In Qxford dictionary, the definition of "survival" is "The state or fact of continuing to live or exist, typically in spite of an accident, or deal, or difficult circumstances", so, nothing shall be more important than how to Survival. Similarly, if SMEs are not survival, he will be nothing. It is the realism around the world, no one care what SME is ever, as long as SME has died, or even if he was ever IPO. For instance, who can we remember, how many SMEs are ever de-listed IPO, and who are ever IPO in Taiwan from 2001 to 2018? Who are still alive up to now? So, SMEs Survival is a great important subject for all SMEs' living problem. We believe that the priority subject of SMEs research shall be the condition of SMEs Survival according to

our perspective. This is why we are very interested in study SMEs especially for their survival first. Although, there are many reasons for the condition of SMEs Survival, but we do experiment under our control data only, those as countable IPRs and the condition of SMEs Survival. Before studying IPRs and SMEs, we must re-confirm that the data of SMEs is absolutely correct and real entities come from company A. All they have real mutual trading relationship with company A up to now.

Following table 1 summarize more important events from those Announced White Book of SME administration Affairs of MOEA, in Taiwan in 2009, arranged by myself in 2018. We believe that there are similar situations around the world. Those data can let us know why we emphasize SMEs is very important for a country. SMEs release ten million career opportunities, the construct ratio of Lager Enterprises and Medium Enterprises are 14.22% vs. 76.57%. Economic activity is close to 35 trillion NT dollars for income, 26 trillion NT dollars for Import, 9 trillion NT dollars for export. So, we can find the contribution of SMEs is too much to be forgotten.

Table 1: *SMEs situation in 2008 in Taiwan   Unit: No, Millions, thousand (Announced white book, 2009)*

	Total	Large Enterprise	Medium enterprise
No. of Enterprise	1,263,846	29,097	1,234,749
construct ratio	100.00%	2.30%	97.70%
employee(Thousand)	10,403	1,479	7,966
construct ratio	100.00%	14.22%	76.57%
Income (Millions NT$)	35,239,137	24,776,441	10,462,696
construct ratio	100.00%	70.31%	29.69%
import (Millions NT$)	25,762,915	16,944,927	8,817,989
construct ratio	100.00%	65.77%	34.23%
export (Millions NT$)	9,476,222	7,831,515	1,644,707
construct ratio	100.00%	82.64%	17.36%

Following Table 2 show sales volume in year 2008, 2009 and 2010 in Taiwan, all data are arranged by myself, but come from Announced White Book in 2017, chapter 7, SME administration Affairs indicated the economic contribution of Sales volume. It indicates that SMEs give big currency flow in their country. The income sales volume of SMEs in 2008, 2009 and 2010 in Taiwan are 35 trillion NT dollars, 30 trillion NT dollars and 36 trillion NT dollars. That's the contribution of enterprises.

Table 2: *Sales volume in Taiwan   Unit: million NT$; % (MOEA)*

	Total	St. Ratio	SME	St. Ratio	LE	St. Ratio
2008	35,239,137	100.00	10,462,696	29.69	24,776,441	70.31
2009	29,981,803	100.00	9,189,463	30.65	20,792,340	69.35
2010	36,239,637	100.00	10,709,005	29.55	25,530,632	70.45

According to Announced White Book in 2017, chapter 7, from SME Administration Affairs, had a statistical analysis of SMEs Survival. During the content of section 1, it had pointed the importance of SMEs for country, being mentioned that SMEs supported a large labors market, wild supply chain and customer chain, and decreased monopoly market or exclusive market. In sec.2, it had mentioned the residual time periods of SMEs Survival too. SMEs concerned the affect to industries, labor market. All big enterprises start from SMEs, so, the condition of SMEs Survival is the fundamental and important key factor for SMEs, so as to be the center of gravity of economic development for a country. It's very pity that collected statistic data to be from 2000 to 2007, 7 years only, short time range, although it has collected over 20 close to 30 thousand of SMEs, from financial administration bureau in Taiwan. Refer to table 3, we can find. The

shortage of that report only focused on the RES of Survival, lack of further research why they died or what factors affect the RES of Survival? The data belong to secondary data, short time period, maybe mix some empty enterprises. But our collected data from company A, have a long-time period, from 1991 to 2017, total 27 years, belong to primary data, and have formal trading record too, to be very rare and precious. In practice, those data belong to be confidential to be very hard to get to be analyzed.

Table 3: *Operation Years of SMEs from 2000 to 2007 (Announce White Book, 2017)*

Res. Year	2000	2001	2002	2003	2004	2005	2006	2007
< 1 year	96723	94803	91435	111510	108235	125313	108320	92957
CR	**9.04%**	**8.79%**	**8.28%**	**9.14%**	**9.30%**	**10.22%**	**8.70%**	**7.52%**
1 ~ 2	99171	93598	94036	102869	109436	108019	120530	106082
CR	**9.27%**	**8.68%**	**8.51%**	**8.43%**	**9.40%**	**8.81%**	**9.68%**	**8.58%**
2 ~ 3	84123	81967	77477	80861	86202	95033	92400	100057
CR	**7.86%**	**7.60%**	**7.01%**	**6.63%**	**7.41%**	**7.75%**	**7.42%**	**8.09%**
3 ~ 4	71920	72092	70554	68208	69533	78119	83272	78070
CR	**6.72%**	**6.69%**	**6.39%**	**5.59%**	**5.97%**	**6.37%**	**6.69%**	**6.31%**
4 ~5	56760	63123	63851	63589	59941	63649	70133	72474
CR	**5.30%**	**5.85%**	**5.78%**	**5.21%**	**5.15%**	**5.19%**	**5.63%**	**5.86%**
5 ~ 10	241572	235959	233742	242604	239409	243123	247247	248543
CR	**22.57%**	**21.89%**	**21.16%**	**19.88%**	**20.57%**	**19.83%**	**19.86%**	**20.10%**
10 ~ 20	252416	260541	279065	275349	279001	289745	290121	296123
CR	**23.58%**	**24.17%**	**25.26%**	**22.56%**	**23.97%**	**23.63%**	**23.30%**	**23.95%**
over 20	167625	176079	194546	275349	212252	223094	233076	242240
CR	**15.66%**	**16.33%**	**17.61%**	**22.56%**	**18.23%**	**18.20%**	**18.72%**	**19.59%**
Total	1070310	1078162	1104706	1220339	1164009	1226095	1245099	1236546
CR	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**#######**	**100.00%**

Above Government data show that SMEs and their survival are the most important roles for their country. We survey and analysis the condition of SMEs Survival and how IPRs affect their Survival shall be a good topic.

2 Research Data

In practice, there are two types about SMEs, one is real operation, who have paid tax to country and have formal trading record in government; another is an empty company, who have no formal trading record and have no paying tax to country, just being established for some special purpose to be zero contribution on one's country, but maybe live with a latent crisis for his social stability in serious. The subject of this research simply focuses on those 800 real SMEs, who have real trading record and pay tax record with company A from 1991 up to the end of year 2017. Because all they are legal and have real entities and have real contribution to their country, meanwhile, population is more efficiency and reliability for SME's reference under our empirical analysis. There is different outcome to come out under different research condition; so, we proceed to study from 800 SMEs, population come from random pick-up from ten thousand of customers of company A.

Company A is established since June 1991, belongs to conservative management in Marketing, Human Resource, and Financial Operation, but positive and aggressive innovation in R&D field. Company A has tens of thousands of SMEs, customers and suppliers, and business relationship partners with company A from 1991 up to now, because he has developed a self-software, what was a purpose output tool for printing, and has a relative corporation, what manufacture peripheral paper of computer. In spite of capital

of company A is 5 million NT dollars only, but total employees are even from 3 persons up to 60 persons and down to 5 persons, he has invested his own copyrights, such as software, 16 IPRs granted by TIPO (2*INV, 7*MOD, 2*DES, 11*TRA) and granted by 7 developing countries, those as USA, Canada, German, UK, French, Japan, China, no borrowing interest-request money from outside. Now, his software is still running in market up to now.

The owner of company A had bachelor's degree in Mechanical Engineering, master's degree in Management, Study certificate of IPRs' program, including technology trading, licensing, from WIPO, National Cheng-Chi University, National Tsin- Hua University, ITRI. He is ever a corporate consultant and corporate lecturer on R&D, ISO and manufacturing fields. He has been a consultant for hundreds of Entrepreneurs. He has been a part-time lecture in University for 11 years, too. He was ever a Branch Manager in Chinese group, Operation manager in USA enterprise, Co-builder in Japanese company to develop marketing in Taiwan and searching suppliers from Taiwan to Japan. He ever evaluated Hon Hai Precision Industry Co., Ltd, original of Foxconn Technology Group, to be a qualified supplier of Chinese Group when he worked at Chinese Group.
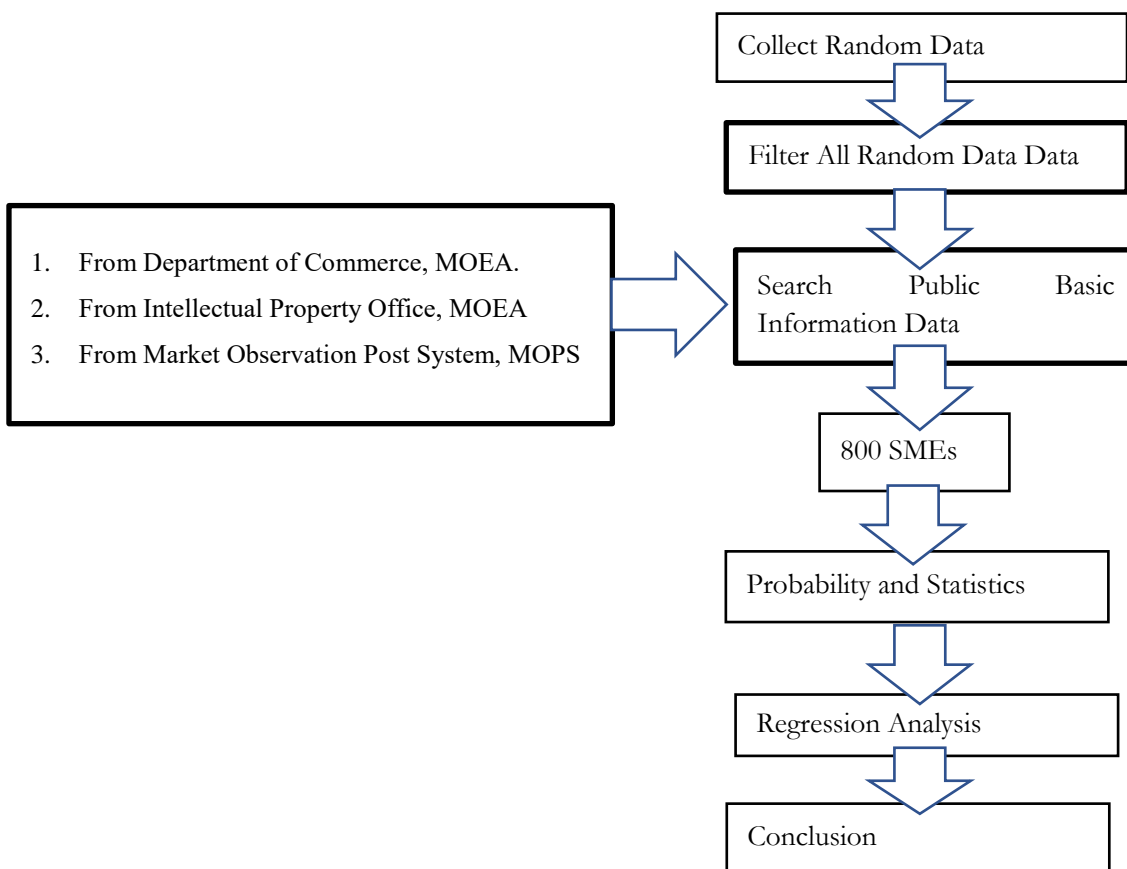

Figure 1: *Research Flowchart*

Data search flow chart can refer Figure 1. In practice, we know there are two types of SMEs, one type is real entities, and another type is like empty companies, just existing for some special purposes. So, all data of this empirical research, total 800 SMEs, come from the direct customers of company A, who established since 1991 up to now, total 27 years interval in Taiwan, and being still operating. The most important key point of this empirical research is all researched SMEs are real entities and having paid tax and real formal trading record with company A. All SMEs data belong to primary data, real entities, and legal enrolled in government. In practice, customers information of one's company belongs to trade secretary and all are hard to get. At first, we filter and double check the basic data of researched SMEs, those as established time, survival or not, revised date, capital, owners, close year… etc., form Ministry of Economic Affairs

(MOEA) in Taiwan. We can get SMEs Survival data from MOEA. We know that the real value of anything depends on the real trade record, not being estimated only; all should be based on economy concept. IPRs are whole concept and belong to intangible assets. We are hard evaluating their real price. So, we try to divide IPRs into two types. One is countable IPRs, granted by the Taiwan Intellectual Property Office (TIPO), those as patent and Trademark; and another is uncountable IPRs, those as copyright, trade secretary...etc, all is hard to get and out of our control. Now, all countable IPRs we can get are Trademark (TRA), Invention (INV), Model (MOD) and Design (DES), all granted by TIPO in Taiwan. Then we survey who are IPO or not from Market Observation Post System (MOPS) in Taiwan. Finally, make conclusions after we analysis by construct ratio and Hypothesis and regression.

There are two subjects to discuss about SMEs Survival, one is die or not, we call it as Condition (CON), another is how long do SMEs sustain to operate, called Residual life(RES) here. Here, we discuss CON first, only. When SMEs want to preserve survival, they need enough competence to fight their competitors, and they shall know what kinds of parameter will affect their CON first. Is IC an important point for themselves to affect their survival? That is the most important reason why we will research and analysis in here. We suppose that IC has two types. One is tangible; and another is intangible. But here, we divide IC into another two types according to practice, one is countable and published information, those as Trademark, Patent...etc; and another is uncountable and unpublished information, those as copyright, trade secretary, etc. We study and analyze those countable IC here first, due to getting from government database. We neglect those uncountable IC due to being concerned confidential, being closed, and out of our control; all they are hard to get and to evaluate in depth due to concerning trade secretary of SMEs. We can only find two items of SMEs countable IPRs from government database, those as Patent (PAT) and Trademark (TRA) due to grant by Taiwan Intellectual Property Office (TIPO). We are hard to get others, those as copyright, trade secretary…etc,. So, all called IPRs here are only pointed to patent (PAT) and trademark (TRA). By the way, we separate PAT into three types, those as invention (INV), model (MOD) and design (DES). Summary, this study collects INV, MOD, DES, PAT, TRA and IPR with different assemblage pool as independent parameters, COD as dependent parameter to run SPSS tool according from these 800 SMEs individually to analyze and research their correlation, regression outcome, to get an empirical outcome. At the same time, we compare the outcome with another summary data arranged by ourselves in practice. There are some interesting outcomes to be close to practical phenomenon, although, the IPRs is very important for the condition of SMEs Survival, but there shall have different IPRs investment and IPRs strategy making in different IPRs pool.
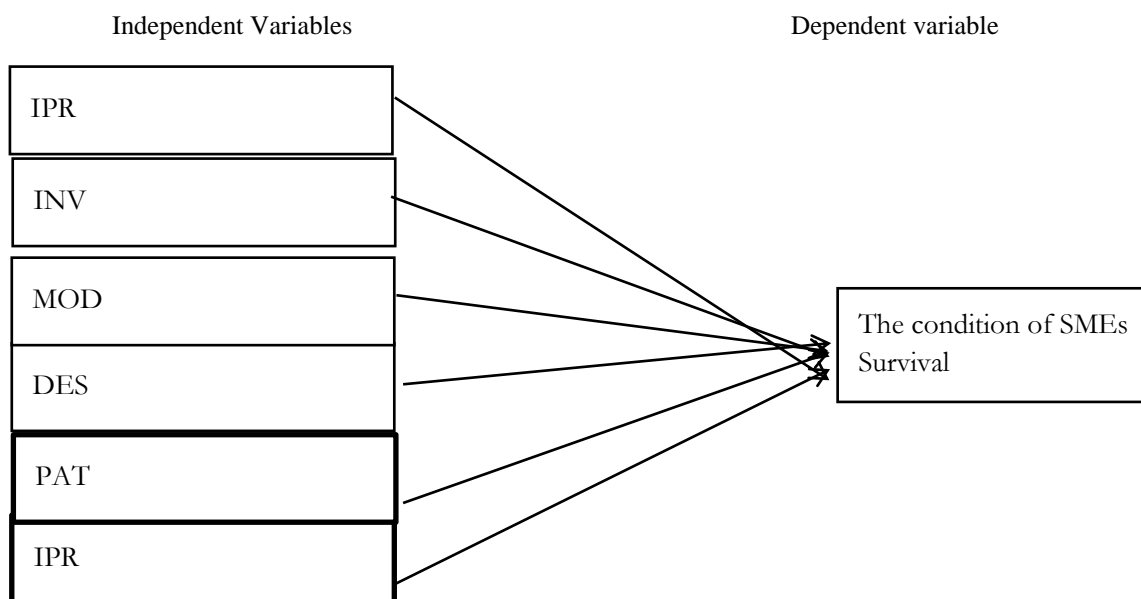

Figure 2: *Research framework*

3   Methodology

3.1   Research Framework

Different item of countable IPRs has different investment strategy because there has different process and operation resource. And we can find 6 items of countable IPRs here only; they are IPR, INV, MOD, DES, PAT and TRA; we research how does individual IPRs affect the condition of SMEs Survival in 21th Century? We want to research following how the items of IPRs individual/assemblage (as independent variable) effect on the SMEs Survival (as dependent variable). Figure 2 shows our research framework.

3.2   Hypothesis among Independent Variables vs. Dependent Variable

Upon TIPO acts, INV, DES and TRA must pass examination of their content by ouside reviewer, but MOD reviews document paper only. All expense is different, pending time are different. So, we propose 6 null Hypothesis as table 4 and test them by correlations significant test to decide to reject/accept null hypothesis or not.

Table 4: *Hypothesizes among Independent Variables vs. Dependent Variable*

No.	Independent Parameters	Correlation Hypothesis
1	IPR	$H1_0$: IPR does not have impact on SMEs Survival.
2	INV	$H2_0$: INV dose not have impact on SMEs Survival
3	MOD	$H3_0$: MOD does not have impact on SMEs Survival.
4	DES	$H4_0$: DES does not have impact on SMEs Survival.
5	PAT	$H5_0$: PAT does not have impact on SMEs Survival.
6	TRA	$H6_0$: TRA does not have impact on SMEs Survival.

3.3   Regression SRM and MRM

We pick up the individual item of countable IPRs as independent variable x, those as INV, MOD, DES and TRA to analysis their effect on the condition of SMEs Survival as dependent variable y. So we use the Simple Regression Model (SRM), (Two-variable Linear Regression Model or Bivariate Linear Regression Model) to study their relationship. When y as dependent variable (or parameter), x as independent variable (or parameter), we are interested in "studying how y varies with changes in x", or "explaining y in terms of x".
A SRM equation is

$$y = \beta_0 + \beta_1 x + u$$

where

β_0 is the intercept parameter, or constant term.
β_1 is the Slop parameter in the relationship between x and y.
"u" is the error term or disturbance in the relationship, as factors other than x that affect y.

Meanwhile, we assembly for items of countable IPRs as independent variable x, such as INV+MOD+DES+TRA to analysis his effect on the condition of SMEs Survival as dependent variable y. So we use the Multiple Regression Model (MRM), (Two-variable Linear Regression Model or Bivariate Linear Regression Model) to study their relationship and compare the relationship among each coefficient. It is more susceptible to other things equal to be analyzed, because it lets us explicitly control for many other factors that affect the dependent variable at the same time. For testing economic theories and evaluating policy effects are important if we must rely on nonexperimental data. To be able to accommodate many explanatory variables where may be correlated, we can hope to infer causality in case of where SRM would be misleading. Figure 3 shows conceptual framework of the condition of SMEs survival and IPR.

A MRM equation is：

$$y = \beta_0 + \sum_{i=1}^{n} \beta_i x_i + u$$

where

β_0 is the intercept

β_i measures the change in y with respect to x_i, holding other factors fixed.

" u " is the error term or disturbance in the relationship , as factors other than $\sum_{i=1}^{n} \beta_i x_i$ that affect y

For instance, in case A, IPRs is independent parameter; and COD is dependent variable.
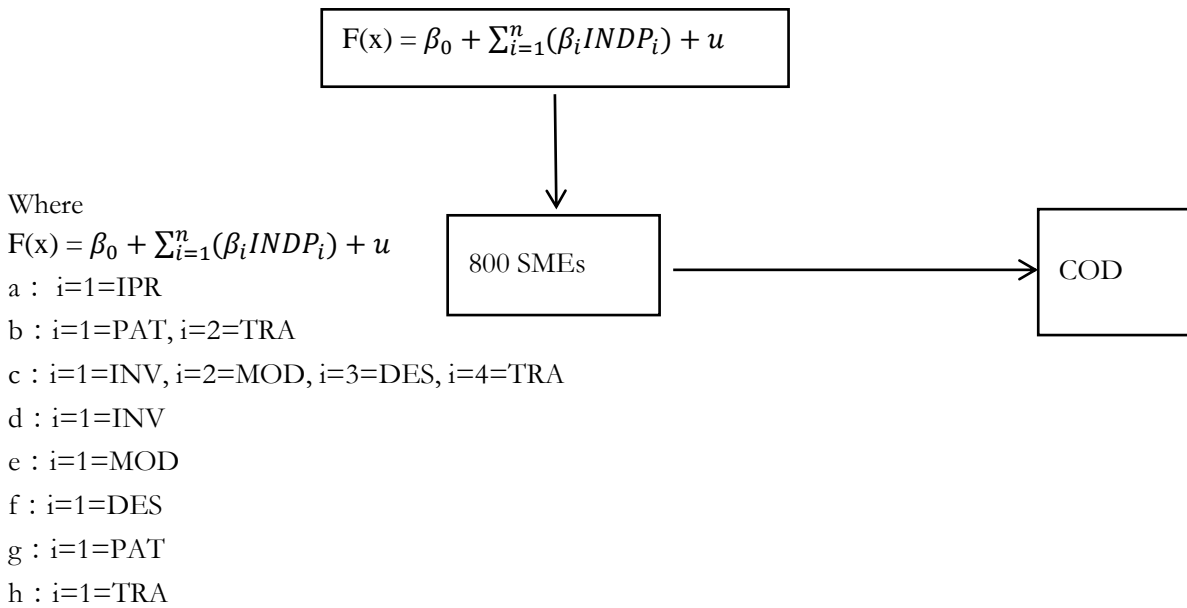
INDP means independent variable.

$$\boxed{F(x) = \beta_0 + \sum_{i=1}^{n}(\beta_i INDP_i) + u}$$

Where

$F(x) = \beta_0 + \sum_{i=1}^{n}(\beta_i INDP_i) + u$

a：i=1=IPR

b：i=1=PAT, i=2=TRA

c：i=1=INV, i=2=MOD, i=3=DES, i=4=TRA

d：i=1=INV

e：i=1=MOD

f：i=1=DES

g：i=1=PAT

h：i=1=TRA

Figure 3: *Conceptual Framework of the condition of SMEs Survival and IPR*

4   Results and Discussion

4.1   Graph of Data information

From Fig 4, we can find the distribution of the established time of the 800 researched SMEs, who were established since1939 to 2017, total around 79 years interval, scope from older to younger. It is close to normal distribution population. Most of those SMEs still have good relationship with company A up to now.
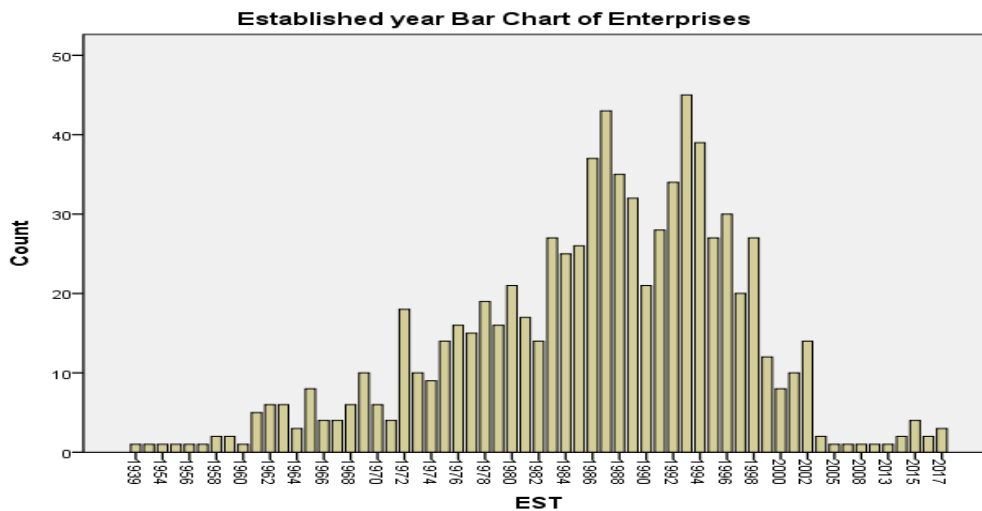
Figure 4: *Bar chart of SMEs established time*

From Fig 5, we can find the distribution of the residual time of 800 researched SMEs, who still keep on operating from 1 year to 66 years interval, scope from younger companies to older companies too.
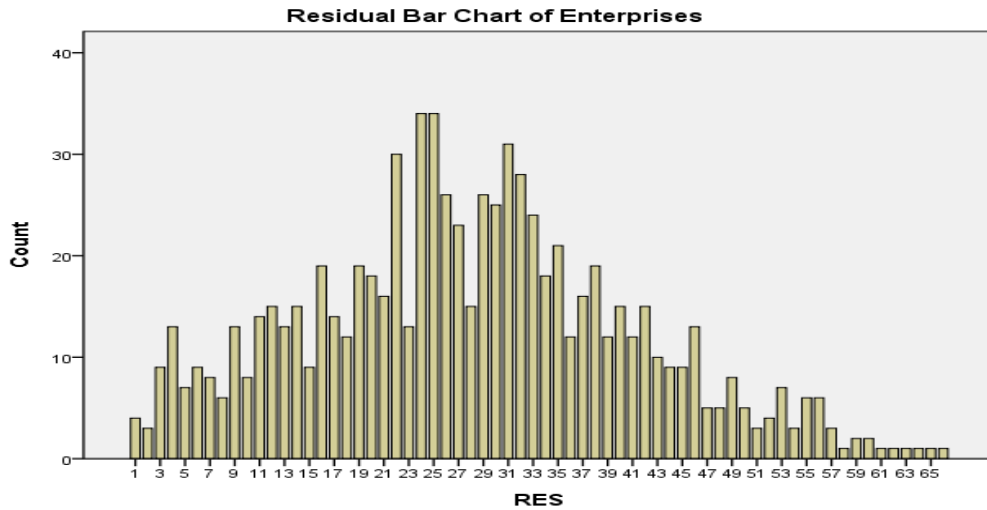

Figure 5: *Bar chart of SMEs Residual time*

4.2 Measurement Descriptive Statistic

From table 5 measurement Descriptive Statistic, the mean of CON, INV, MOD, DES, PAT, TRA, IPR is .68, 9.81, 8.71, 3.28, 21.82, 12.35, and 34.17. The standard Deviation is .466, 105.249, 34.602, 23.157, 132.087, 49.266 and 170.157.

Table 5: *Measurement Descriptive Statistic*

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
CON	800	0	1	546	.68	.466
EST	800	1939	2017	1589069	1986.34	10.709
RES	800	1	79	22287	27.86	13.160
INV	800	0	2699	7847	9.81	105.249
MOD	800	0	603	6972	8.71	34.602
DES	800	0	551	2625	3.28	23.157
PAT	800	0	2922	17454	21.82	132.087
TRA	800	0	856	9880	12.35	49.266
IPR	800	0	3422	27334	34.17	170.157

4.3 Correlations

From table 6 a, b correlations, we can find that INV is not significant, 0.093; DES is light significant, .029; MOD, PAT, TRA and IPR are significant, 0, .006, 0 and .002. Meanwhile, we can make a Hypothesis result as table 7. We reject null hypothesis to MOD, DES and TRA exclude INV.

Because we use correlations hypothesis test, according to the symbol of the running result of correlations, there are 3 types of correlations. We reject null hypothesis and change to accept Alternative Hypothesis H_1, when correlation have " * " symbol or " ** " symbol, otherewise we will not reject null hypothesis but accept H_0

So, we summarize following table 7 correlative Hypotheses according to significant of correlations. We find that we don't reject null hypotheses at INV. So, we argue that INV does not affect the condition of SMEs Survival. On the other hand, we reject null hypotheses and change accept alternative hypotheses on IPR, MOD, DES, PAT and TRA, all they will affect to the condition of SMEs Survival.

From table 6a, b correlations, we can summarize all result of Hypothesis according correlations test as following table 7. All IPR, MOD, DES, PAT and TRA are reject null Hypothesis but accept alternative

Hypothesis, depend on correlative test, they are "***will have impact on SMEs Survival.***" exclude INV, can't reject null Hypothesis, " INV does not have impact on SMEs Survival.".

Table 6 a: *Measurement Correlations Statistic*

		CON	EST	RES	INV	MOD	DES	PAT	TRA	IPR
CON	Pearson Correlation	1	-.158**	.553**	0.059	.136**	.077*	.097**	.126**	.112**
	Sig. (2-tailed)		0	0	0.093	0	0.029	0.006	0	0.002
EST	Pearson Correlation		1	-.861**	-.121**	-.178**	-.168**	-.173**	-.271**	-.213**
	Sig. (2-tailed)			0	0.001	0	0	0	0	0
RES	Pearson Correlation			1	.123**	.205**	.170**	.183**	.275**	.221**
	Sig. (2-tailed)				0	0	0	0	0	0
INV	Pearson Correlation				1	.413**	.228**	.945**	.572**	.899**
	Sig. (2-tailed)					0	0	0	0	0
MOD	Pearson Correlation					1	.322**	.647**	.606**	.678**
	Sig. (2-tailed)						0	0	0	0
DES	Pearson Correlation						1	.442**	.475**	.480**
	Sig. (2-tailed)							0	0	0

Table 6 b: *Measurement Correlations Statistic - to be continue*

		CON	EST	RES	INV	MOD	DES	PAT	TRA	IPR
PAT	Pearson Correlation							1	.698**	.978**
	Sig. (2-tailed)								0	0
TRA	Pearson Correlation								1	.831**
	Sig. (2-tailed)									0
IPR	Pearson Correlation									1
	Sig. (2-tailed)									

Table 7: *Correlative Hypothesis*

No.	Independent Parameters	Correlation Hypothesis	Correlations.
1	IPR	$H1_1$: IPR will have impact on SMEs Survival.	.112**
2	INV	$H2_0$: INV does not have impact on SMEs Survival.	0.59
3	MOD	$H3_1$: MOD will have impact on SMEs Survival.	.136**
4	DES	$H4_1$: DES will have impact on SMEs Survival.	.077*
5	PAT	$H5_1$: PAT will have impact on SMEs Survival.	.097**
6	TRA	$H6_1$: TRA will have impact on SMEs Survival.	.126**

4.4   SRM and MRM

From table 8 to table 15 Regression equations, we put all individual coefficients on two types of regression formula, one type of coefficients is unstandardized; and another type is standardized. Because we find that there are some unstandardized coefficients (Unstd Coefs) in regression analysis is zero, according to the output of IBM SPSS 23 tool, that's unreasonable, why? Maybe those Unstd Coefs are too very small close to zero to be calculated, so, neglect them. In order to get clearer formula, we put Unstd Coefs on regression formula.

All output formula here, Coefficients, have been surveyed or Test by SPSS tool, those as Variables Entered/Removed, Model Summary, ANOVA Test and Residuals Statistics in advance. We can find R^2 for every case to be 0.013, 0.016, 0.022, 0.004, 0.018, 0.006, 0.009 and 0.016. Although they are bad goodness, but ANOVA Test is significant in case A, $0.002 < 0.05$, case B, $0.002 < 0.05$, Case C, $0.001 < 0.05$, case E, $0.000 < 0.05$, case F, $0.029 < 0.05$, case G, $0.006 < 0.05$, and Case H, $0.000 < 0.05$, exclude Case D, $0.93 > 0.05$, Independent variable of Case D being INV. Maybe we support that INV investment of IPR in 800 SMEs is not absolutely necessary because the business model of most SMEs here is OEM and less having self-end-products or self-brand-product in market, Most of them are OEM or trading-end only.

Although most of Regression coefficients are very small, but it has been proved that almost all countable IPRs items affect to the condition of SMEs Survival from empirical research, being found by running SPSS, not to mention including those all uncountable IPRs. So, we can directly indicate that all IPRs shall affect to the condition of SMEs Survival if we plus uncountable IPRs.

In practice, INV is a big investment for the operation of most SMEs; especially for those resource limited SMEs or unnecessary use enterprises, because of high expense and long pending time, to be a hard way for SMEs. So, the result, what INV does not affect to the condition of SMEs Survival, appear on this empirical research. INV investment is not only way for SMEs to invest IPR, there are many ways for the IPR investment of SMEs to promote competitiveness themselves, those as trade secretary, copyright…etc.

We arrange all Coefficients table and equations for Regression Model of the condition of SMEs Survival; for concerning assemblage pool of IPRs, there are 8 cases, from case A to case H.

Case A. Independent parameter is IPR. R Square equals to .013.

From table 8, SRM of IPR, we can find that the coefficient of the effect of IPR on COD is significant, .002.

Table 8: *Coefficients for IPR*

	Unstd Coefs		Sstd Coefs		
Model	B	Std. Error	Beta	t	Sig.
1 (Constant)	.672	.017		40.236	.000
IPR	.000	.000	.112	3.178	.002

Case B. Independent parameter is PAT+TRA. R Square equals to.016.

From table 9 SRM of PAT+TRA, we can find that the coefficient of the affect of PAT+TRA on COD is not significant and significant, .711 and .021.

Table 9: *Coefficients for TRA+PAT*

	Unstd Coefs		Sstd Coefs		
Model	B	Std. Error	Beta	t	Sig.
1 (Constant)	.668	.017		39.603	.000
PAT	6.412E-5	.000	.018	.371	.711
TRA	.001	.000	.113	2.307	.021

Case C. Independent parameter is INV+MOD+DES+TRA. R Square equals to.022.

From table 10 MRM of INV+MOD+DES+TRA, we can find that the coefficients of the effect of MOD is significant .031; but INV, DES and TRA on COD are not significant, .53, .675 and .155.

Table 10: *Coefficients for TRA+DES+INV+MOD*

Model		Unstd Coefs		Sstd Coefs		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.663	.017		38.970	.000
	INV	.000	.000	-.027	-.628	.530
	MOD	.001	.001	.096	2.163	.031
	DES	.000	.001	.017	.420	.675
	TRA	.001	.000	.075	1.422	.155

Case D. Independent parameter is INV.   R Square equals to.004.

From table 11 SRM of INV, we can find that the coefficient of the effect of INV on COD is not significant, .093.

Table 11: *Coefficients For INV*

Model		Unstd Coefs		Sstd Coefs		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.680	.017		41.155	.000
	INV	.000	.000	.059	1.679	.093

Case E. Independent parameter is MOD. R Square equals to.018.

From table 12 SRM of MOD, we can find that the coefficient of the effect of MOD on COD is not significant, .000.

Table 12: *Coefficients for MOD*

Model		Unstd Coefs		Sstd Coefs		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.667	.017		39.591	.000
	MOD	.002	.000	.136	3.872	.000

Case F. Independent parameter is DES. R Square equals to.006.

From table 13 SRM of DES, we can find that the coefficient of the affect of DES on COD is not significant, .029.

Table 13: *Coefficients for DES*

Model		Unstd Coefs		Sstd Coefs		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.677	.017		40.823	.000
	DES	.002	.001	.077	2.188	.029

Case G. Independent parameter is PAT. R Square equals to.009.

From table 14 SRM of PAT, we can find that the coefficient of the effect of PAT on COD is not significant, .006.

Table 14: *Coefficients for PAT*

Model		Unstd Coefs		Sstd Coefs		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.675	.017		40.607	.000
	PAT	.000	.000	.097	2.756	.006

Case H. Independent parameter is TRA. R Square equals to.016.

From table 15 SRM of TRA, we can find that the coefficient of the effect of TRA on COD is not significant, .000.

Table 15: *Coefficients for TRA*

Model	Unstd Coefs		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	.668	.017		39.623	.000
TRA	.001	.000	.126	3.583	.000

We can summarize table 8 to table 15 to replace all coefficients of each regression on formula to get table 16. From every coefficient of SRM is significant exclude INV. In practice, INV investment is hard to grant from TIPO; must exhaust much money and other resources; must spend too much time to spend and revise process. INV is also not easy to commercialize and utilize, if its content does not qualify enough because that most of INV focus on fundamental science. DES emphasizes its shape and graph, protecting range is too small to infringe competitors. SMEs must invest too much for every type or model of products, not economic. For Marketing and Brand, MOD, granted from TIPO, is easier than INV and DES; to get certificate equals to get protect for manufacture and sales. The strategy of TRA investment is for marketing and build up the self-brand of SMEs. So, DES and TRA are significant.

Table 16: *Regression formula result*

No.	case	Regression Result
1	Case A	$COD_{Unstd} = .672^{***} + (0.000^{***})x_{IPR}$ $\widehat{CON}_{std.} = 0.672^{***} + 0.\widehat{112}^{***}x_{IPR}$
2	Case B	$COD_{Unstd} = .668^{***} + (6.412E-5)x_{PAT} + .001^{**}x_{TRA}$ $\widehat{CON}_{std.} = .668^{***} + \widehat{0.018}x_{PAT} + 0.\widehat{113}^{**}x_{TRA}$
3	Case C	$COD_{Unstd} = .663^{***} + (.000)x_{INV} + .001^{**}x_{MOD} + (.000)x_{DES}$ $\qquad\qquad + (.001)x_{TRA}$ $\widehat{CON}_{std.} = .663^{***} + -\widehat{.027}x_{INV} + \widehat{.096}^{**}x_{MOD} + +.\widehat{017}x_{DES} + .\widehat{075}x_{TRA}$
4	Case D	$COD_{Unstd} = .680^{***} + (0.000^{*})x_{INV}$ $\widehat{CON}_{std.} = .680^{***} + .\widehat{059}^{*}x_{INV}$
5	Case E	$COD_{Unstd} = .667^{***} + .002^{***}x_{MOD}$ $\widehat{CON}_{std.} = .667^{***} + .\widehat{136}^{***}x_{MOD}$
6	Case F	$COD_{Unstd} = .677^{***} + .002^{**}x_{DES}$ $\widehat{CON}_{std.} = .677^{***} + .\widehat{077}^{**}x_{DES}$
7	Case G	$COD_{Unstd} = .675^{***} + (0.000^{***})x_{PAT}$ $\widehat{CON}_{std.} = .675^{***} + .\widehat{097}^{***}x_{PAT}$
8	Case H	$COD_{Unstd} = .668^{***} + .001^{***}x_{TRA}$ $\widehat{CON}_{std.} = .668^{***} + .\widehat{126}^{***}x_{TRA}$

The coefficient is listed *, **, *** indicates the coeefficients hat are significant at 10%, 5% and 1% probability.

5 Conclusions

IPRs is like water, it can float SMEs or overturns SMEs depending on whether SMEs invest it by which side. SMEs must have a sense of self-esteem in advance when they want to invest IPRs. Regarding as our empirical research, we all know that countable IPRs are very important for SMEs in 21th century; but it's impossible for SMEs to invest all items of IPRs due to limited resource. We find that countable IPRs really affect the condition of SMEs Survival; but there are many different assemblage pools of countable IPRs; SMEs have too limited resources to invest all. They can select the best way of IPRs investment for themselves, referring priority sequence advice of our empirical research, when they cannot but face

infringement problem of IPR; We find that IPR, PAT, TRA, MOD have impact on the condition of SMEs Survival significantly; DES has slightly significant impact on the condition of SMEs; INV does not have impact on the condition of SMEs. This result gives further evidence for those treatises to persuade their readers how IPRs are important; we suggest that the priority sequence of individual countable IPRs investment is MOD > TRA > IPR > PAT > DES > INV, according to correlations p value, SRM and MRM. Our outcome will be a good guideline and reference not only for SMEs, but also for all SOHO, firms, and government, especially for those entrepreneurs who plan to start up a SME. We suggest all entrepreneurs that they start from newer customers when they plan to enter into market, because no one knows them, and older customers have their own- existing suppliers and have no idea about you, lack of trust relationship, they must spend in patience. This research can supplement and strengthen sufficient empirical evidence for lack of more detail and clear information in existing management field. We must do right thing at first, then we can do things right.

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