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FEATURE

External Productivity of the Off-Campus Master of Business Administration Program of the Philippine Christian University Dasmariñas Campus*

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Abstract: This study examines the productivity of a recently begun Master of Business Administration program. The findings provide support for a positive productivity index that shows that the program is economically attractive to its graduates.

Introduction and Background of the Study

Philippine Christian University (PCU) was granted full autonomy status in the year 2001. This autonomy status conferred upon the University, among other things, such benefits as full administrative deregulation with the submission of reports limited essentially to the reports of the promotion of students and lists of graduates, and curricular deregulation. The latter included the authority to offer new degree courses allied to the existing Level III courses without the need for prior approval of the curriculum or the granting of a government permit/recognition. Likewise, the autonomy status provided the University an opportunity to improve its professional services offered to the public, since accredited programs can modify their requirements to reflect changes in knowledge and practices generally accepted in the field. Also, there is less intervention by public agencies in its operations, which allows it to privately provide for the maintenance and enhancement of educational quality and excellence. The University can innovate and develop degree programs both on-campus and off-campus; programs that are dynamic and relevant. Such benefits

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have allowed PCU to modify its graduate programs, including its MBA program, to benefit clientele in its extension classes.

More than five years have passed since the granting of autonomy status to the University. It is in this context that the present study aims to know whether or not the graduates of the MBA extension classes of the Dasmariñas campus are finding the program economically profitable, thus indicating the positive external productivity of the program.

Objective of the Study

This study sought to determine the external productivity of the Master of Business Administration Program of the Philippine Christian University-Dasmariñas campus compared to a productivity index model.

Specifically, the study addressed the following concerns:

1. What is the profile of the graduates of the program in terms of:
   1.1 Age, gender, position, and monthly salary before graduation;
   2.2 Monthly salary, a year, two years, and three years after graduation?
2. Does the profile significantly affect current monthly salary level of the graduate and to what extent?
3. Under what circumstances do carry over effects of graduation from the program significantly affect monthly salary received?
4. Given the indices of productivity, is graduation from the program considered to be profitable, and to what extent?
5. Given the findings, what model of productivity can be derived?

Scope and Limitations of the Study

The subjects under study belong to the 2001 graduates of the MBA program. These are graduates from various extension classes of the University. Their monthly salaries received after graduation were considered to be their return after the program. Only tuition and miscellaneous fees were considered as costs. Other costs can be incurred with or without the program, hence they were excluded from the study.

Research Methodology

This is a study on the external productivity of the MBA program, thus, the study used a descriptive/historical research design. It is descriptive in nature as it

utilized descriptive statistics to describe the profile of its sample. It is historical in nature as it used historical data in terms of received salaries over a period of three years.

The Study Sample

The sample consists of graduates of the MBA program of Philippine Christian University-Dasmariñas Campus in the year 2001. There were 102 graduates in this group. However, only 91 (89%) were included in the study since eleven of these graduates have emigrated to the United States (4), Canada (5), and Singapore (2). Their data will be included in a follow-study to include graduates from 2002 and 2003.

Of the 91 graduates, 85 (93%) are working in multinational companies located at the First Cavite Industrial Export (FCIE) in Dasmariñas, Gateway Business Park in Manggahan, Dasmariñas, and the Cavite Export Processing Zone Authority (CEPZA) in Rosario, Cavite. Two (2%) are entrepreneurs, one (1%) is the director of a private bank, and 3 (4%) are college faculty members. The graduates are in key positions, including serving as department heads, owners, and vice-presidents.

Data Collection

Each of the graduates in the sample was contacted either through e-mail or phone. No attempt was made to meet them personally to avoid bias, specifically on the issue of monthly salary. For ethical reasons, the names of the graduates were not included.

Statistical Treatment of Data

The profile of the sample was treated using descriptive statistics, including frequency, percentage, and mean. Using the current salary of the graduates as the dependent variable and the rest of the profile as predictor variables, a multiple regression equation was developed. Originally, a multiple stepwise regression was utilized to eliminate non-significant variables. However, all the predictor variables entered into the equation.

Carry-over effects were determined using monthly salary levels a year after, two years after, and three years after graduation. The carry-over effects determined how long it took for the intervention to have significant effects. Another intervention beyond the MBA degree would be necessary when the effect is no longer found to be significant.

The derived regression model was tested using an F-test to determine the validity of the model. A t-test of significance on the individual effects of the

predictor variables was also made to determine the effect of each predictor variable when used singly.

All statistical tests were set up using a confidence level of $\alpha = .05$, or at $\alpha = .01$ when appropriate.

Economic Indicators of Profitability

The economic indicators to test external productivity that were used in this study are present value of expected returns, net present value, benefit cost ratio, and internal rate of return.

The industry internal rate of return benchmark is 18%. This rate was used to determine the present values of the expected future returns using discounting procedures. The expected returns were taken as the actual monthly salaries received after graduation.

To be considered profitable, the total present values of the future returns should be greater than the total investment made, i.e., the net present value of returns must be positive. This was computed by subtracting total investment from total present value of returns.

The benefit-cost-ratio (BCR) was computed by dividing total present value of returns by total investment. To be considered profitable, the resulting quotient should be greater than 1. BCR, also referred to as productivity index, explains the return for every peso invested.

The internal rate of return on the investment was computed by equating the total investment with the total present value of returns. The rate at which they are equal corresponds to the internal rate of return. In a given portfolio of investments which are currently available, in this case for education investments, the weighted average rate of return is 18%. If the computed rate of return is greater than 18%, then such investment is considered to be highly profitable.

Data Analysis and Findings

A profile of the research subjects is discussed below. Descriptive statistics was employed to present the subjects' age profile, position and monthly salary before and after graduation, and number of promotions after graduation.

Age Profile of Sample

The surveyed respondents were 41 (45.1%) females and 50 (54.9%) males with ages ranging from 22 to 49. Table 1 presents the age profile of the study sample. Most of the sample consisted of young adults, with only about one quarter of the graduates being older than age 36 at the time of the survey.

Position Profile of Subjects before Graduation

Table 2 presents the positions held by the subjects before graduation from the program. The department heads, supervisors, managers, vice president, and consultants were all working at the Cavite Export Processing Zone. The majority of them already held supervisory positions.

Table 1
Age Profile of Sample (n=91)

Age Range	**Frequency**	**Percentage**
22 – 26	18	19.7
27 – 31	26	28.5
32 – 36	25	27.4
37 – 41	10	10.9
42 – 46	8	8.7
47 – 51	4	4.8
Total	91	
Average age	32	

Table 2
Position Profile of Students (n=91)

Position	Frequency	Percentage
Department Head	29	31.9
Supervisor	12	13.3
Manager	36	39.6
Vice President	2	2.2
Consultant	6	6.6
Entrepreneur	2	2.2
Director	1	1.0
Faculty	3	3.2
Total	91	

Monthly Salary Profile of Subjects
Before Graduation

Table 3 shows the monthly salary profile of the students before their graduation from the program. Salaries ranged from PhP 13,463 to a maximum of PhP 46,347 per month. The frequency per salary range was distributed approximately equally at 10.9% for each salary range, with some of the middle ranges having a slightly higher percentage. The average monthly salary was PhP 25,940.60 ± PhP 5,595.00.

Table 3
Monthly Salary Profile of Students before Graduation
Year 2001 (n=91)

Salary Range	Frequency	Percentage
13,463 - 19,467	11	12.1
19,468 – 21,958	10	10.9
21,959 – 24,110	10	10.9
24,111 – 25,443	10	10.9
25,444 – 26,745	10	10.9
26,745 – 27,660	12	13.4
27661 – 29,586	12	13.4
29,587 – 34,276	10	10.9
34,276 – 46,357	6	6.6
Average salary range =	PhP25,940.60 $\pm$ 5,595.00	

Number of Promotions after Graduation
from the MBA Program.

Table 4 presents the frequency of promotions that the graduates experienced after graduation. All of the graduates experienced at least 1 promotion over a three-year period. Of the 91 graduates who returned the survey, 25 (27.5%) were promoted once over the three-year period of study, 43 (47.2%) were promoted twice, and 23 (25.3%) were promoted three times. The graduates indicated that their MBA degree was a primary reason for the promotions.

Table 4
Number of Promotions Three Years after Graduation (n=91)

Number of Promotions	Frequency	Percentage
1	25	27.5
2	43	47.2
3	23	25.3
Total	91	
Average number of promotions =	1.97 ± 0.73	

Monthly Salary Profile a
Year after Graduation

After graduation from the program, the graduates were given promotions and a corresponding increase in their monthly salary (for salary rates one year after graduation, see Table 5). For the lowest salary range, this increase was 44% on its lower limit and 14% on its upper limit. As to the highest salary range, the lower limit increased 26% and the upper limit 171%. (see Table 6 and compare with Table 3). The average monthly salary a year after graduation was PhP 30,215.29 ± 12,036.63, which is an average increase of 16%. This is well above the industry average of 10% increase per year.

Table 5
Monthly Salary Profile of Graduates, Year 2002
A Year after Graduation (n=91)

Salary Range	Frequency	Percentage
19,344 – 22,100	15	16.4
22,101 – 25,142	9	9.9
25,143 – 27,411	11	12.1
27,412 – 28,645	10	11.0
28,646 – 29,965	11	12.1
29,966 – 31,699	10	11.0
31,700 – 35,444	10	11.0
35,445 – 43,250	10	11.0
43,251 – 125,450	5	5.5
Average salary increase =	PhP30,215.29 ±12,036.63	

Monthly Salary Profile
Two Years after Graduation

Two years after graduation, 43 (47.2%) were given a second promotion. Correspondingly, there was a sizeable positive change in their monthly salary range (see Table 6 and compare with Table 5). With the previous year as benchmark, the limits of the lowest range increased 10% while the upper limit was 15%. As to its upper range, the lower limit increased 17% and its upper limit at 20%. It can be seen that the salary ranges at the upper brackets are increasing faster than those in the lower brackets. The average monthly salary was PhP 33,925.65 +/- PhP14,477.87. This is an increase of 12% on the average that is higher than industry average of 10%.

Table 6
Monthly Salary Profile of Graduates, Year 2003
Two Years after Graduation (n=91)

Salary Range	Frequency	Percentage
21,278 – 25,410	16	18.4
25,411 – 28,050	10	10.9
28,051 – 30,305	11	12.0
30,305 – 32,377	10	10.9
32,378 – 33,044	11	12.0
33,045 – 36,603	10	10.9
36,604 – 39,941	10	10.9
39,942 – 50,734	10	10.9
50,735 – 150,450	3	3.1
AVERAGE	33,925.65 +/-14,477.87	

Monthly Salary Profile
Three Years after Graduation.

Three years after graduation, 23 (25.3%) experienced their third promotion. Corresponding to these promotions are increases in monthly salary levels (see Table 7 and compare with Table 6). The lower range has its lower limit increased at 10% and its upper limit at 6%, while the higher salary range has increased 19% in its lower limit and 33% at its upper limit. It is again shown that those at the higher salary ranges are increasing faster than those at the lower ranges.

The average monthly salary is PhP38,475.65 ± PhP19,056.21, an increase of 13% from the previous year (compare Tables 6 and 7). Likewise, this increase is higher than industry averages at 10%.

Table 7
Monthly Salary Profile of Graduates, Year 2004
Three Years after Graduation (n=91)

Salary Range	Frequency	Percentage
23,406 – 27,015	10	11
27,016 – 29,855	10	11
29,856 – 32,866	10	11
32,867 – 34,445	10	11
34,446 – 35,881	10	11
35,882 – 38,016	10	11
38,017 – 42,361	10	11
42,362 – 45,935	10	11
45,936 – 60,440	9	11
60,441 – 199,595	2	1
Average	38,475.65 +/-19,056.21	

Regression Equations

The regression model that follows describes the relationships of the predictor variables to monthly salary level of the students before graduation from the program. The predictor variables are positions held (EQUI), gender (SEX), age (AGE), salary (t+0, t+1, t+2, t+3), and number of promotions (PROM) experienced.

An F-test of the whole regression equation was done to determine if the derived model was a valid tool for predicting future salary levels. A t-test of the significant effects of each of the predictor variables was also done to determine whether or not each predictor variable had a significant effect on current salary level when taken singly.

The SAL_{t+0} denotes current monthly salary level, SAL_{t+1} denotes monthly salary level one year after graduation, SAL_{t+2}, refers to monthly salary level two years after graduation, and SAL_{t+3}, denotes monthly salary level three years after graduation. The SAL_{t+is} represents carry-over effects of interventions made previously to the near future. A negative sign will reflect that the intervention is no longer effective in that period. Table 8 contains the coefficients of the

resulting regression model, as well as information on the significance of each coefficient..

Table 8
Regression Model

Variable	**B**	**t-value**	**p**
Position held (EQUI)	75.353	0.525	.601
Gender (SEX)	471.029	0.761	.449
Age (AGE)	40.746	0.869	.388
Salary 1 yr after graduation (SAL_{t+1})	1.337	4.269	<.001*
Salary 2 yrs after graduation (SAL_{t+2})	0.165	0.469	.640
Salary 3 yrs after graduation (SAL_{t+3})	-0.939	-7.000	<.001*
Number of promotions (PROM)	3537.00	7.660	<.001*
Constant	7233.22	4.37	<.001*
$SAL_{(t+0)} = 7233.22 + 1.337(SAL_{(t+1)}) - .939(SAL_{(t+3)} + 3537.00(PROM)$ $F = 40.065 \ p < .001$			

Initial salary level. The computed constant which represents the initial monthly salary is PhP 7,233.22. This significantly increased with every unit increase in the values of the significant predictor variables: position held, gender, age, salary next period, salary 2 years after graduation and number of promotions. The only variable that contributed a negative effect was level of salary 3 years after graduation. This suggests that the intervention of getting a Master's degree is no longer efficient three years out.

The computed expected minimum initial salary level is highly significant ($p < .001$), that is, the computed expected minimum salary level is expected to increase.

Position (EQUI). Position had a positive effect on monthly salary level. However, the t-value of 0.525 is not significant at $\alpha = .05$. The t-test shows that position taken by itself had no significant effect on salary.

Gender. The t-test to determine if gender is a significant predictor of salary level increase had a t-value of 0.761 with $p = .449$. The test was not significant which suggests that gender taken singly does not play a significant role in the expected increases in salary.

Age. The test to determine the predictive effect of age on expected increase in monthly salary level has a t-value of 0.869 with $p = .388$. This is not

significant at $\alpha = .05$ which suggests that taken singly, age does not contribute significantly to an increase in salary.

Salary a year after graduation ($SAL_{(t+1)}$) This salary one year after the intervention (graduation from the program) is a significant predictor of salary increase (t-value = 4.269, $p < .001$). This suggests that the intervention has a significant effect a period right after its administration; that is, the MBA degree contributed significantly to the increase in monthly salary level.

Salary two years after graduation, $SAL_{(t+2)}$. Salary two years after graduation did not significantly predict salary increase ($p = .640$). This indicates that the carry over effect of receiving the MBA degree to increase salary is not significant after two years. The intervention is significant only after the first period, i.e., salary increases after two years are no longer significantly attributed to the intervention which is completion of the program.

Salary three years after graduation, $SAL_{(t+3)}$. This variable is a significant predictor of monthly salary level (t-value = -7.000, $p < .0005$). This indicates that the intervention has a significant effect on monthly salary level three years after. Nevertheless, the relationship that exists is inverse. This inverse relation suggests that the intervention no longer contributes to a desired output and it is time to introduce a new intervention. The graduate has to determine what other type of intervention is needed to maintain the increase in his monthly salary level.

Promotion. As expected, promotion contributed significantly to the increase in monthly salary level. This is attested by the t-value of 7.660 with a $p < .001$.

F-test of whole regression model. The test of significance of the regression model is done using an F-test. The F-value is 40.605 with $p < .001$. The result shows that the regression model is a valid model to predict expected monthly salary level increases.

For the sample under study, that is 2001graduates of the MBA program, the identified variables contribute as a whole to the expected increases in their monthly salary levels.

Indicators of Economic Profitability

The indicators of economic profitability that are used in this study are present value of economic returns (PVER), net present value of economic returns (NPVR), benefit cost ratio (BCR) (sometimes called profitability index), and internal rate of return (IRR).

Table 9 presents the economic profitability profile of the graduates under study. Collectively, the graduates invested a total of PhP 4,731,090 in their 18

months in the MBA program. This value is treated as a reference to compute the present values of returns.

Table 9
Economic Profitability Profile of Graduates (n=91)

Economic Indicators	Value
Total Investment	PhP 4,731,090
Present Value of Economic Returns	PhP 6,685,760
Net Present Value of Economic Returns	PhP 1,954,670
Benefit Cost Ratio (Profitability Index) per Graduate	2.42
Internal Rate of Return per Graduate	317 %

The discount rate used for computing the present and future values was 18%, which is the education industry benchmark. The future returns were considered to be the monthly salaries of the graduates over the three-year period after graduation from the program. The computed present value of economic return is PhP 6,685,760.

The net present value of economic returns is computed by subtracting investment from the present economic value of future returns, in this case, PhP 1,954,670. This value is greater than 0, thus, the graduates have a positive net present value which is considered to be profitable.

The BCR is 2.42 which is greater than 1.00, that is, for every PhP1.00 invested, the graduate has a return of PhP2.42. He recovers his investment including PhP2.42 more. A BCR that is greater than 1 is an indication that the program yielded profitability to the graduates.

With the benchmark for profitability in education at 18%, the computed internal rate of return of the graduate is 317%. This indicates that the graduate is highly profitable, a reflection of the high external productivity of the program, the intervening factor to increase the profitability of the graduate.

Summary of Findings, Conclusions, and Recommendations

Of the given profiles, gender, age, and salary two years after graduation did not significantly affect currently salary levels when taken singly. Position, salary a year after, and promotion did significantly affect current salary level.

The carry-over effects were significant only a year after graduation; two years after, the effect was no longer significant; three years after, the inverse

relationship shows that another intervention would need to be made in order to maintain productivity increases.

The external productivity of the program (or productivity index) was greater than industry benchmark, that is, the graduates of the program outperformed the industry. The derived regression equation model is a valid tool to predict salary increases.

The MBA program in its extension classes has a positive productivity index outperforming the industry.

The program pursues continuous improvement. Given this positive outlook and performance, the program should continue to create and innovate to offer dynamic and relevant MBA programs in its extension classes.

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