

39 reinvent their operations and organization behavior. This changed a lot of variables in
40 construction and resulted in making operations more viable. All aspects of the
41 construction industry became sensitive to survival of the fittest theory and therefore,
42 very little data was available to benchmark PM Compensation in the post-recession
43 period.

44 While peer-group benchmarking is still partially grounded on organization size and
45 on industry peers, the practice has greatly evolved over the years, with other factors
46 such as performance, complexity, global operations, or credit ratings being increasingly
47 used as criteria for benchmarking, irrespective of an organization's parent industry [1].
48 As stated above, it is common for companies to have benchmarking to improve viability
49 of an organization. It can be related with a variety of factors and compensation should
50 be considered as one of them. "The demand for benchmarking at a firm can come from
51 a variety of factors such as regulatory issues, liability concerns, investor concerns,
52 competitive pressures, and public perception [2]." As he mentioned, it is not only
53 restricted with certain topics which let us to broaden the factors and come up with
54 efficient solutions.

55 Furthermore, even in healthy economies it is a hard job to do comprehensive study
56 about compensation benchmarking since there are a lot of variables that impact these
57 studies. As, Michael Thom and Thom Reilly state in their study; "But by all accounts,
58 making such comparisons is challenging. Job classifications differ, and even when
59 attempting to match salaries for comparable positions, certain duties and required
60 education levels can vary. Comprehensive assessments must also go beyond simple
61 wage comparisons to include additional elements of compensation, including fringe
62 benefits, employee tenure, performance, and retirement policies [3]."

63 The compensation benchmarking was necessary to improve organizations gains. It
64 also serves as an element to settle efficient pay rates in order to maximize company's
65 performance. As stated by Shin, "Firms use benchmarking to maintain the
66 competitiveness of pay packages and retain managerial talent [4]." Compensation
67 benchmarking benefits the organizations not only monetarily but also in a variety way
68 such as productivity and retention of key employees. However, being micro-economic
69 oriented (i.e., assessing only firm and industry specific influences), hegemony and
70 agency perspectives do not offer a comprehensive explanation for the evolution of CEO
71 compensation across firms and industries [5]. In fact, this was also valid for project
72 managers and for other fields too. There were very few reliable sources available for
73 executive compensation.

74 Additionally, there was another challenge, which was mentioned by Gomez-Mejia
75 "...the empirical evidence to date regarding the sales versus profit maximization
76 hypothesis as a determinant of executive pay level is mixed at best [6]." However, they
77 contend that there is a large link between firm size and CEO pay and a marginal one
78 between firm performance and CEO pay [7], which lead us to use that example for
79 project managers' compensation in construction [7]. Yet, it is stated that "...challenge
80 future compensation scholars to develop more complete theoretical and empirical
81 support and validation capable of guiding researchers' choice of performance measures,
82 timeframes, samples, methods, and variables [8]."

83 One study by Bender [9], examined the determinants of executive remuneration
84 consultants' advice. The study found out that remuneration consultants take into
85 account the size and ownership of the company, the company's business and strategy,
86 the company's culture and organization, the impact of individuals on the process and
87 scheme and the scope of the assignment to be able to advise the remuneration
88 committee on executive pay structure and levels [10]. In this study, all the variables
89 mentioned kept constant except organization size in order to benchmark these
90 compensations. By doing so, companies were analyzed as independent variable where
91 the salaries of the project managers were considered as the dependent variable.

92 **2 Research Methodology**

93 **2.1 Data Collection**

94 In order to benchmark project managers' compensations, a wide range of data was
95 collected with a survey conducted in 2016 [11]. Over 2,300 companies were contacted
96 across Georgia with 81 contracting companies participating in the survey. First,
97 participants were asked to state their company type whether it is general or specialty
98 contractors in order to prepare appropriate results. The data collected was from forty
99 Georgia-based general contracting companies and 41 specialty contractors. The survey
100 included a wide range of contractors' annual revenue that ranged from 5million dollars
101 in gross revenue to more than 100 million dollars in gross revenue with responses
102 ranging from 16 of the general contracting companies. Given the results, it became clear
103 it was important to benchmark project manager's compensation in relation to company
104 size

105 **2.2 Data Analysis**

106 According to the results of the survey, the data collected was analyzed in terms of
107 size of the organizations in relation to the project managers' compensations. In order to
108 demonstrate the results, company size was taken as an independent variable where the
109 compensation of the project manager of that company was considered dependent
110 variable. The change between these two variables was mapped to benchmark the PM
111 Compensation. Company size was defined based on the yearly gross revenue of each
112 organization.

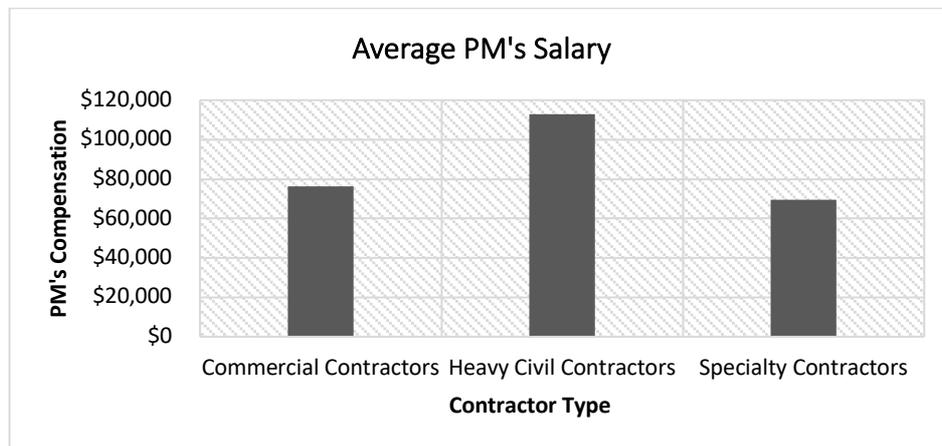
113 In order to analyze the data, the annual gross revenues of the general contracting
114 companies were divided into six groups. The group categories were named as: Under
115 \$5 million, \$5-9.9 million, \$10-24.9 million, \$25-49.9 million, \$50-99.9 million and
116 more than \$100 million.

117 The organizations that accrued less than 10 Million \$ gross revenues were
118 categorized as small-size organizations whereas those with 10-25 Million \$ gross
119 revenue were categorized as mid-size and the ones with gross revenue greater than 25
120 Million \$ were categorized as large-size organization.

121 Additionally, considering end-user perspectives and to relate the results more
 122 appropriately with the prevailing trends for construction types, commercial and heavy
 123 civil contractors were analyzed separately for small and mid-size organizations.

124 3 Results & Inferences

125 First, the project managers of each contractor type were determined. According to
 126 the results, it has been understood that project managers working for heavy civil
 127 contractors are getting paid more than the others with an average payment of \$112,800
 128 annually. Project managers that are working for general contractors has the second most
 129 payment rates where they got paid \$76,264 average annual payment. Finally, project
 130 managers that are working for specialty contractors are getting paid an average payment
 131 \$69,643 annually.



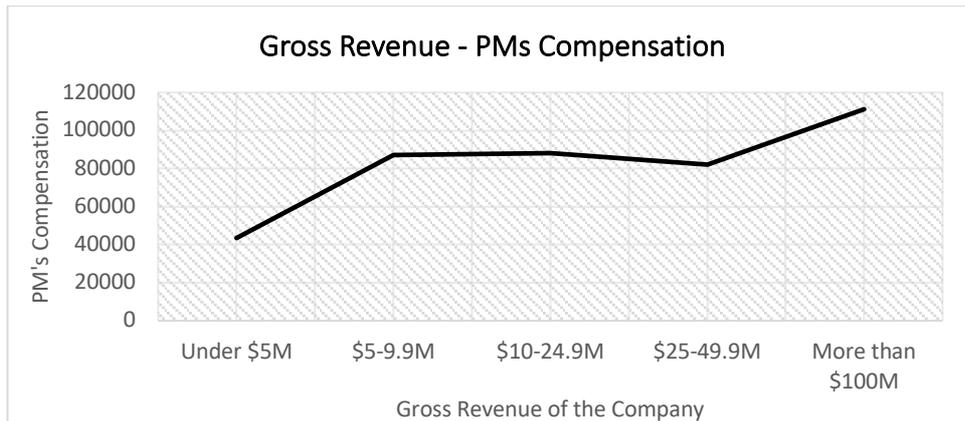
132
 133 **Figure 1:** Average project manager salary for different contracting company types

134 **Table-1:** Company sizes and PMs compensations

Company Size	PMs Compensations	Avg.
Under \$5 Million	\$32000, \$55000	\$43500
\$5-9.9 Million	\$55000, \$78000, \$66000, \$15000	\$87250
\$10-29.9 Million	\$83000, \$135000, \$70000, \$65000	\$88250
\$25-49.9 Million	\$84000, \$80000	\$82000
\$50-99.9 Million	No Data	-
More than \$100 Million	\$100000, \$95000, \$150000, \$100000	\$111250

135 After project manager's salaries matched with the contractor types, the study also
 136 examined the relationship between gross revenues and PM's salaries and then also
 137 compared the same with the organization expertise.

138 According to the results of the survey as shown at Table-1, the PMs compensation
 139 tends to increase between the companies which have less than \$5 million gross revenue
 140 to \$10-24.9 million and then decrease for the companies with \$25-49.9 million. It again
 141 increases for the companies with more than \$100 million gross revenue.



142
 143

Figure 2: Gross revenue - PMs compensation

144 Organizations with \$10-24.9 million gross revenue tend to pay more to their project
 145 managers as compared to less than \$10 million and \$25-99.9 million.

146 However, the organizations with the revenues more than \$100 million are the ones
 147 who pays the most.

148 It has been shown that project managers compensation reflects an increasing trend
 149 for small-size construction organizations with gross revenue increase. The gross
 150 revenue of the organization and PMs compensation increases together with the
 151 company sizes until the organization become mid-size which is between \$10-25
 152 Million. After that point onwards, the gross revenue increase of the organization starts
 153 affecting PMs compensations negatively until the organization reaches large-size
 154 category. When an organization reaches large-size category, compensation for the
 155 project managers again begins to increase with the increase in gross revenue earnings.

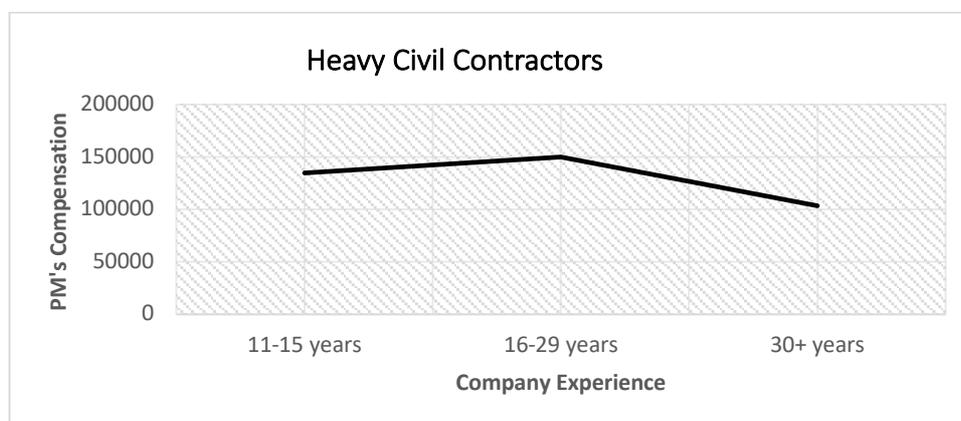
156 Additionally, it was observed that organization's years of experience and field focus
 157 can affect this trend too. Hence, the PM's compensations and company experience in
 158 different contracting types was also examined and compared.



159
160

Figure 3: Commercial contractors PM's salary vs company experience

161 The results show, the company experience and the gross revenue increase has the
162 same impact on the PM's compensations in commercial contractors while the same
163 relationship was not found true for heavy civil contractors (see Figure 4). For heavy
164 civil contractors, the project manager's compensations showed an increasing
165 compensation trend with the organization experience until it reached 30 years of
166 experience, and then the organization tends to pay less for their project managers
167 according to the findings from this study.



168
169

Figure 4: Heavy civil contractors PM's salary vs company experience



Figure 5: Specialty contractors PM's salary vs company age

170
171

172 The results for specialty contractors matched the trends shown in findings from
173 commercial contractors to some extent. PM compensations belonging to specialty
174 contractors showed increasing salaries with the experience of the organization until the
175 companies achieve 15 years of experience. Thereafter, the curve shows a slight dip or
176 stagnation of salaries for organizations from 15-30 years of experience.

177 Another interesting finding is that an organization's experience and gross revenues
178 has the same impact on project manager's compensation for commercial and specialty
179 contractors, whereas the salaries decrease after an organization reaches closer to large-
180 size gross revenue earning category.

181 **4 Conclusions**

182 The findings discussed above clearly show different trends in PM's compensation
183 for those belonging to mid-size organizations versus high or low gross revenue earning
184 entities. Based on the above findings, PMs could expect to have increasing salaries
185 while the organization continues to grow its earnings until it reaches the category of
186 mid-size organization. For mid-size organizations, it was found that project managers'
187 salaries have inverse relationship with company's gross revenue increase as the
188 company's revenue gets closer to be Large-size organization earnings.

189 It is important to note that gross revenue range of organizations influence the way
190 project managers got compensated, however, these trends vary with the size and
191 experience of the organization.

192 **5 Future Recommendations**

193 The salary-decrease phenomena taking place in in mid-size contracting
194 organizations even when revenues are increasing needs to be investigated in greater

195 depth. The objective of such a study in future could be to determine the causes in salary
 196 decrease of project managers despite revenue growth in an organization.

197 The salary drop between mid-size organizations versus others could also be related
 198 to its growth rate and investment in a future study. The anomaly of the middle-income
 199 trap theory from the principles of macroeconomics, needs to be investigated further for
 200 construction contracting organizations.

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