

Impact of Salesforce Automation and social selling technologies on salesforce performance: A meta-analytic review

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Abstract

Drawing on the Task-Technology Fit (TTF) and contingency theories, the study examines: (1) the extent to which Salesforce Automation (SFA)/CRM and social selling technologies influence salesforce performance and (2) contextual and method factors that moderate the focal relationship. Using a random-effects model and Comprehensive Meta-Analysis version 4, we analyzed 52 independent studies with 11784 observations. Our results reveal that SFA/CRM and social selling technologies have a positive, *moderate* effect on salesforce performance, but the impact of SFA/CRM is larger than social selling technology. Again, findings show that the impact of these technologies is stronger on salesforces' performance with customers when compared to job performance and sales quota. Finally, our moderator analysis reveals that contextual factors (i.e., sector, sales setting, and sales context) moderate the focal relationship. Both the theoretical and managerial implications of these findings are elucidated.

Keywords: Salesforce Automation, social selling, salesforce performance, meta-analysis

Track: Sales Management and Personal Selling

1. Introduction

In the last years sales “stack” is one of the most relevant issue from practitioner and scholars; the growing use of sales technologies like CRM, artificial intelligence, big data analytics, LMS, e-commerce sites, social selling, etc., by firms, has led managers and academics to make important reflections on the impact of these on salesforce and organizational performance. Research postulates that sales technologies can enhance sales performance in terms of securing more closing opportunities, improving salesperson productivity, improving customer relations, increasing sales revenue, and improving profitability (Agnihotri, Trainor, Itani, and Rodriguez, 2017).

The thrust of the present study is on two leading sales technologies: SFA/CRM and social media selling, and their relations to salesforce performance. SFA/CRM involves the utilization of diverse hardware and software (Information Technology, mobile phones, e-mail, and Web browsers) applications to automate or convert manual sales and administrative activities to electronic processes (Ko & Dennis, 2004). Research shows that SFA can lead to increased productivity and customer relationship management (Ko & Dennis, 2005). On the hand, the use of social media in selling refers to any social interaction-enhancing technology that sales professionals can implement to generate content and develop networks (Terho, Giovannetti & Cardinali, 2022; Agnihotri, Kothandaraman, Kashyap & Singh, 2012). Studies on social selling (e.g., Ancillai, Terho, Cardinali, and Pascucci, 2019; Agnihotri, Trainor, Itani, and Rodriguez, 2017) indicate that the use of social media by salespeople has the potential to influence customer behavior, outcome performance, and sales performance, and all stages of the sales process from lead prospecting and qualification to customer relationship management (Andzulis, Panagopoulos & Rapp, 2012).

Despite the general recognition that the adoption of sales technology can enhance both organizational and salesforce performance, the empirical findings on the relationship between sales technology and salesforce performance are inconclusive and contradictory, with some studies reporting positive relationships (e.g., Agnihotri, Trainor, Itani & Rodriguez, 2017), some no significant relationships (e.g., Pradiptarini, 2011) and other negative relationships (e.g., Rapp, Agnihotri & Forbes, 2000). Furthermore, the empirical studies are fragmented across contexts, cultures, countries, and disciplines, which makes it challenging to comprehend comprehensively how and to what extent SFA/CRM and social media selling technologies influence salesforce performance and the boundary-spanning conditions (moderators) that facilitate or impede the success sales technology adoption by firms. In

addition, studies are more focused on a single technology than a comprehensive vision of sales tech ecosystem (Giovannetti, Cardinali & Sharma, 2021).

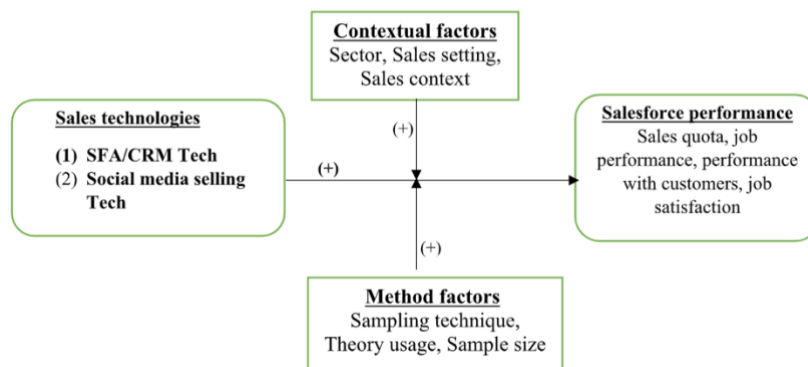
Notwithstanding this research deficit, to date, no meta-analysis has been done in this research stream to clarify the anecdotal results. Followingly, we draw on the Task-Technology Fit (TTF) theory to examine the extant knowledge on the relationship between SFA and social media selling and salesforce performance using meta-analysis, which is “a quantitative, formal, and epidemiological study design that is used to systematically combine and assess the results of previous scientific studies to derive conclusions about that body of research” (Haidich, 2010, p.12). More specifically, we aim to address the following two relevant research questions: 1) To what extent do SFA and social media selling technologies influence sales performance, and 2) What contextual and methodological moderators moderate this focal relationship? We offer the following contributions to sales management research and practice by addressing these research questions. First, theoretically, our adoption of meta-analysis, which is the 'best method to reach consensus' (Combs et al., 2011, p. 194), helps us to quantify, clarify, and summarize the disparities and commonalities of the extant literature on the sales technology—salesforce performance relationships while accounting for the boundary spanning moderators that may account for heterogeneities in the focal relationship. The study also contributes to the methodological rigor of the field by using a quantitative method of a systematic review, as the previous contributions appear to be qualitative—oriented reviews.

2. Meta-analytic model and theory

Fig.1 presents our meta-analytic model of the relationship between salesforce SFA and social media usage and salesforce performance. We adopted the Task-Technology Fit (TTF) theory to develop our meta-analytic model of the relationship between SFA and social media selling utilization and salesforce performance. The theory has been adopted to elucidate technology adoption by salesforce and its influence on salesforce performance (Ahearne, Jelinek, & Rapp, 2005). The fundamental tenet of TTF is that a person’s utilization of technology impacts that person’s performance if the technology fits the person’s task, with the impact on performance being larger (lower) as the fit between the technology and the task increases (decreases) (Bowen, Lai-Bennejean, Haas & Rangarajan, 2021). Therefore, notwithstanding the mixed results, as our model illustrates, we expect that the usage of SFA and social media selling technologies will positively affect salesforce performance (i.e., job performance (e.g., optimization the frequency and content of sales), job satisfaction, percentage of sales quota, and performance with customers).

Furthermore, according to the contingency theory, different contexts or environments mostly have diverse needs, demanding differentiated operations management approaches (Romero-Silva et al., 2018). To this end, we explored the economic sector (manufacturing vs. service), sales setting (online vs. offline), and sales context (B2B vs. B2C) as context-dependency moderators that may influence the sales technology—salesforce performance relationships. Research shows that the sector in which a firm operates consists of varied resource requirements, innovation prospects, frequency of novel product development, and other crucial resources and capabilities. From the lens of the dynamic capabilities theory, the ability of a firm to integrate and reconfigure resources and competencies might differ by sector type and, ultimately, company performance (McWilliams & Siegel, 2011). Studies also show that the sales context, whether B2B or B2C, might influence technology adoption and, consequently, performance because the nature of the business might affect technology engagement, information process, and organization fit (Bowen, Lai-Bennejean, Haas & Rangarajan, 2021). Yet, it is not established in the literature whether the performance of salesforce in B2B is greater than in B2C contexts. Besides contextual factors, field experts note that the inconsistent results can be partly attributed to method factors that may affect the strength of the focal relationship. Thus, we explored sampling technique (probabilistic vs. non-probabilistic), sample size (small vs. large, based on the median of the samples as threshold), and theory usage (atheoretical vs. theoretical).

Fig. 1: Meta-analytic framework



3. Methodology¹

Analogous to previous meta-analyses, we carried out a bibliographic keyword search to identify and select articles that examined the relationship between SFA/CRM and social selling technologies and salesforce performance from 1990 to 2022 (October) in well-known internationally recognized business and management databases: Web of Science, Scopus, and EBSCO. The search was done

¹ Authors are available to provide more details about the methodological section, which was shortened due to the maximum length of the paper.

by entering the undermentioned keywords in the title, abstract, and keywords field in the databases by using the Boolean operations such as "OR, AND, NOT: "salesforce automation," "SFA", "customer relationship management," "CRM," "social selling," "social media selling," "sales technology," "job performance," "performance with customers," "percentage of sales quota," "job satisfaction," "salesforce performance" etc. In addition, we included articles in the analysis based on the following criteria: (1) English language, full-text online scholarly articles that examined either SFA/CRM or social selling technology in relation to salesforce performance; (2) the study was quantitatively manipulated; that is, the study provides coefficient metric or enough statistical information to facilitate the computation of correlation coefficients; and (3) studies without correlation coefficients provided r-variants (F-test, T-test, regression, etc.) that can be converted to r-coefficients (Borenstein, Cooper, Hedges & Valentine, 2009). A total of 897 articles were generated from the initial search, but we filtered these papers against different elements such as scholarly articles, year, and English language. We also removed the duplicate papers and non-quantitatively analyzed papers. After the inclusion and exclusion phases, 50 studies in 52 independent scholarly articles were identified, with 11874 observations and 52 effect sizes. The meta-analysis metric that has been employed is the Pearson correlation coefficient metric. The correlation coefficients were either picked directly from the study or computed through the r-variants (Hunter & Schmidt, 2004). Subsequently, we adjusted the effect sizes for reliability to correct for attenuation arising from random measurement error (Hunter & Schmidt, 2004). Moreover, we tested publication bias, which addresses those positive results are easier to publish when compared to negative ones (Feng, Ma & Jiang, 2020) using the conventional method known as the funnel plot and Fail-Safe N (FSN). Our analysis shows that publication bias is no issue in this study. Finally, the significance of the moderator analysis was examined via subgroup analysis via QB and meta-regression. Our results are shown in the next section.

4. Findings

4.1 SFA/CRM and Social selling and individual salesforce performance relationships

Table 1 provides the result of the overall or aggregate effect of SFA/CRM and social selling technologies on salesforce performance. Findings show that the average strength of the aggregate effect sizes is significantly small-moderate (medium) (.16—0.28), based on the criteria suggested by Cohen (1988), where an effect size of .20 is interpreted as small; .50 equates to a medium effect, and effect size larger than 0.80 is deemed as large effects. From Table 1, it can be observed that the overall impact of SFA/CRM and social media selling technologies on overall salesforce performance is positive ($r = .23$) and significant ($p < .001$) since the confidence interval does not include zero. Furthermore, the FSN is consistent as it discloses

that 6665 primary studies are required to render this finding non-significant. Again, our findings demonstrate that SFA/CRM ($r=.23$; $p<.001$) and social media selling ($r=.20$; $p<.001$) independently and significantly influence salesforce performance, and results are very consistent, as seen in the FSN values of 4642 and 172); however, the aggregate impact of SFA is larger than social media selling technology, indicating that a firm's ability to automate many of its manual sales activities to electronic processes can enhance its performance more than the adoption of social media selling. As well, our results indicate that the aggregate impact of SFA and social selling is stronger on salesforces' performance with customers ($r=.28$; $p<.001$) compared to job performance ($r=.25$; $p<.001$), and percentage of sales quota ($r=.19$; $p<.001$).

Table 1: Aggregate/disaggregate effects of SFA/CRM and social selling technology on salesforce performance

	N	K	rz	-CI	+CI	Z	Q	I ²	QB	FSN
Aggregate effects										
SFA/CRM & social selling	11874	52	.23	.19	.27	10.40	263.98	80.68		6665
									11.89	
Disaggregate effects										
SFA/CRM	10001	42	.23	.19	.28	9.65	213.99	80.84		4642
Social selling tech	1873	10	.20	.10	.30	3.73	48.84	81.57		173
									16.78	
Disaggregate effect by performance										
Composite	2815	08	.16	.03	.28	2.35	71.59	90.22		141
Job performance	2372	12	.25	.18	.31	7.17	28.19	60.97		387
Job satisfaction	820	02	.32	-.07	.63	1.63	13.90	92.80		NC
Performance with customers	1606	11	.28	.17	.39	4.78	55.75	82.06		335
Sales quota	4077	18	.19	.13	.25	5.92	58.02	70.70		508

* K (effect sizes); N (observations); rz (standardized correlations coefficient); *** $p<.001$; ** $p<.05$; $p<.001$; * $p<.1$

4.2 Study moderators

Findings from Table 1 above demonstrate that our Q-statistic and Higgins I-squared statistics are very significant, which means that there are heterogeneities across the empirical correlations. To this end, we performed a moderator analysis using subgroup analysis (QB) (Table 2) and Meta-regression (MARA) (Table 3) to identify the contextual and methodological characteristics that may account for the between-study variance. First, findings reveal that economic sector significantly influences the sales technology—salesforce performance relationship ($QB = 5.69$, $p < .001$; $B = -.184$, $p < .001$), such that the effect sizes are larger in studies conducted in the manufacturing sector ($r=.26$; $p<.001$) than those in the service ($r=.20$; $p<.001$). Moreover, our results show that the moderating role of sales setting is significant ($QB = 9.54$, $p < .001$; $B = -.172$, $p < .001$), but those studies conducted on offline sales performance produce larger effects ($r=.24$) than those in online

sales activities ($r=.18$). Finally, both our subgroup analysis ($QB = 9.54, p < .001$) and meta-regression ($B= -.175, p < .001$) demonstrate that sales context plays a significant moderating role, such that studies in the B2B context produce larger effect sizes ($r=.25$) than those in the B2C ($r=.19$). For the methodological moderators, we did not find any significant moderating roles of sampling technique, sample size, and theory usage as indicated by both our subgroup and meta-regression.

Table 2: Effects of method moderators on the overall SFA & Social selling—salesforce performance relationships

	N	K	rz	-CI	+CI	Z	Q	I ²	QB	P-value	FSN
Contextual factors											
Economic sector									5.69	.001	
Manufacturing	5667	25	.26	.19	.32	6.93	163.9	85.4			1795
Service	1734	10	.20	.12	.29	4.56	28.52	68.4			168
Mixed	4473	17	.20	.14	.26	6.16	68.33	76.6			658
Sales setting									9.54	.001	
Online	2421	08	.13	.03	.28	2.63	86.1	91.9			75
Offline	9453	44	.24	.20	.28	11.38	170.1	74.7			5267
Sales context									8.47	.001	
B2B	4688	26	.25	.19	.31	8.11	113.9	78.0			1980
B2C	4123	17	.19	.10	.27	4.23	102.7	84.4			433
Both	3063	9	.21	.14	.28	5.49	29.5	72.9			247
Method moderators											
Sampling technique									1.68	.056	
Non-probabilistic	1498	11	.29	.17	.39	4.80	46.56	78.52			293
Probabilistic	10376	41	.21	.17	.26	9.19	206.01	80.58			4123
Theory usage									1.19	.878	
Atheoretical	3891	11	.26	.18	.34	6.23	47.85	79.10			425
Theoretical	7983	41	.22	.17	.27	8.23	215.39	81.43			3690
Sample size									2.98	.061	
Small	3370	28	.24	.16	.32	5.85	149.41	81.93			1275
Large	8504	24	.22	.17	.26	8.69	111.81	79.43			2080

* K (effect sizes); N (observations); rz (standardized correlations coefficient)



Table 3: Results of the meta-analytical regression analyses (MARA)

Contextual moderators	B	SE	Z-value	p-value
Economic sector (0=Manufacturing, 1 = service)	-.184	.069	-2.67	.001
Economic development (0=HDI, 1=HDI)	-.097	.051	-1.72	.051
Sales setting (0=online, 1=offline)	-.172	.060	-2.82	.004
Sales context (0=B2B, 1=B2C)	-.175	.055	-3.16	.001
R² =.25; Q=23.82, p=0.000				
Method moderators				
Sampling technique (0=probability sampling, 1=non-probability)	-.069	.064	-1.32	.248
Theory usage (0=atheoretical, 1=theoretical)	-.052	.056	-.90	.365
Sample size (0=small, 1=large)	.020	.046	.044	.662

Note(s): *P<0.05; **P<0.01; ***P<0.001

5. Discussion and conclusions

Empirical studies on the sales technology—salesforce performance relationships have been at the forefront of scientific research in the marketing and sales literature in the past few decades.

However, because findings are mixed and scattered across contexts, cultures, and disciplines, we have a limited comprehension of the average elasticity of the effect of sales technology on salesforce performance, as well as the contextual and method factors that may influence results. Our meta-analysis makes the first attempt to integrate the findings across the extant literature to establish the extent to which sales technology, specifically, SFA/CRM and social selling, affect salesforce performance. Thus, our meta-analysis advances knowledge in this research stream by providing more definitive conclusions (Combs et al., 2011) than qualitative reviews (Phan et al., 2018). Followingly, we advance the below contributions and conclusions. First, our analysis indicates that SFA/CRM and social media selling have a positive and significant impact on overall and disaggregate salesforce performance, which debunks the findings that revealed negative or no significant relations (e.g., Avlontinis & Panagopoulos, 2005) to highlight the importance of these technologies on salesforce performance (e.g., Bowen et al., 2021; Terho, Giovannetti & Cardinali, 2022) in terms of job performance, sales quota, and performance with customers. These findings demonstrate that although sales technology adoption may require that the technology fits the task to produce meaningful returns, which may be challenging at times, its performance gains far exceed the cost associated with the integration and adoption of these technologies, demonstrating that a salesperson's use of these technologies can lead to positive outcomes. Second, findings show that the relative strength of sales technology on salesforce performance varies, showing that the aggregate effect of SFA is larger than social selling, a finding that could be partly due to the fact that SFA is widely adopted compared to social media, which is in its infancy with engagement and effectiveness issues (Guesalaga & Kapelianis, 2012). Third, our findings indicate that both SFA and social media selling are strongly related to salesforces' performance with customers, which supports the current thinking of the literature that SFA and social media augment customer relationship management (Ko & Dennis, 2004). Furthermore, our moderation analysis shows that the relationship between SFA and social media selling and salesforce performance was more robust in the studies carried out in the manufacturing sector than those in the service sector, a finding that could be due to the widespread automation of sales activities in B2B manufacturing compared to the service. Also, we found that offline sales activities produce better performance than online activities, which could be partly explained by the observation in the literature that the internet and online settings can create challenges for salesforce and even users, which, in turn, can affect salesforce performance. Moreover, we found that the performance of salesforce engaged in B2B is stronger than those in the B2C, which may be due to the flexible technology engagement, information process, and organization fit between firms compared to those in B2B (Bowen, Lai-Bennejean, Haas & Rangarajan, 2021). With respect to the method factors, we did not find any significant moderating

roles of sampling technique, sample size, and theory usage. For managers, our finding emphasizes the importance of implementing and adopting SFA and social selling initiatives and programs in a firm's marketing and innovation orientations and strategies. Our aggregate results show that the expected mean effect is $r=.23$ overall; SFA $=.23$; social media selling $=.20$), which is considered for a practical purpose (Cohen, 1988). However, managers need to consider the relationship's moderate or medium effect. Because of the medium nature of the average effect, managers must not view these technologies as a short-term strategy but as a medium-term or long-term innovation strategy. Furthermore, the relative strength of the SFA and social media selling has key implications for firms regarding their strategic orientation and resource allocations. Lastly, results show that the sales technology—salesforce performance is context-dependent—economic sector, sales setting, and sales context, which calls for managerial attention. For example, firms operating online will have to ensure salesforce and user compatibility to enhance their salesforce performance, while those firms in the B2B salespeople will need to hire those who know how to use social media because they will be more adept at incorporating these technologies in their selling functions.

6. Limitations and future studies

The results and the potential limitations of this meta-analysis provide insightful directions and suggestions for future research in this field. First and foremost, our meta-analysis was based only on bi-variate analysis without examining the causal effects. Future studies can employ meta-structural equation modeling to account for mediators like salesforce behavioral outcomes and antecedents. Again, our analysis of the moderating factors excludes many other vital factors like culture, economic development, geographical region, industry intensity, age, etc., that could be examined in future studies. Likewise, the analysis of methodological factors could verify those examined in this study while investigating new ones like study design, year of publication, etc., to help explain some of the heterogeneities in the results. Finally, we have examined the impact of SFA and social media selling on only salesforce performance, but future studies could extend our model by examining organizational performance as well as other sales technologies like BDA, AI, e-commerce, etc.

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