Agency in Pharmaceuticals

Vretenar, Nenad; Katunar, Jana; Kardum, Maja

Vretenar, N., Katunar, J. & Kardum, M. (2024) "Agency in Pharmaceuticals", Drezgić, S. et al. (ed.), Dealing with uncertainty, Research monograph - First Edition, University of Rijeka, Faculty of Economics and Business, pp. 321-336

CHAPTER 17

Agency in Pharmaceuticals

Nenad Vretenar[1], Jana Katunar[2], Maja Kardum[3]

ABSTRACT

In recent decades, due to the growing problems of information asymmetry and measurement of work performance, the agency problem has become even more evident than before and is also present in many business relationships, not only between owner (principal) and manager (agent). This is particularly evident in companies where business success depends on intellectual labor, teamwork, and other forms of hard-to-measure work, where the agency problem can be recognized between managers (as principals) and key sales representatives (account managers) (as agents). In addition to the familiar cases of insurance salespeople and account managers in B2B telecommunications, this is certainly the case in the pharmaceutical industry, where key customers, such as pharmacies and physicians, are persuaded or pressured by competing pharmaceutical companies. Agents who deal with key customers on behalf of a pharmaceutical company work very autonomously, are relatively difficult to monitor by their superiors (principals), and the best of them are difficult to retain (bond). Therefore, dealing with the agency problem that occurs in this industry is key to their business success and a good showcase for several similar situations. The objective of this article is to determine the relationship between the level of agency costs, both monitoring and bonding, and the motivation and satisfaction of the employees of a pharmaceutical company. Thirty sales representatives of a pharmaceutical company were surveyed. Data were collected on employee motivation and key motivators, various influences on job performance, possible reasons for changing companies, etc. The results provide insight into the impact of the company's investment in monitoring and bonding sales force employees on their motivation and performance.

Key words: *agency costs, information asymmetry, pharmaceuticals*

JEL classification: *D82, M54*

[1] Associate Professor, University of Rijeka, Faculty of Economics and Business, Ivana Filipovića 4, 51 000, Rijeka, Croatia. Phone: +38551355111. E-mail: nenad.vretenar@efri.hr.

[2] Assistant Professor, University of Rijeka, Faculty of Economics and Business, Ivana Filipovića 4, 51 000, Rijeka, Croatia. Phone: +38551355111. E-mail: jana.katunar@efri.hr.

[3] Mag. oec., E-mail: maja.kardum1@gmail.com.

1. Introduction

This paper focuses on the relationship between manager and sales agent in the pharmaceutical industry, viewed through the theoretical framework of agency theory. Although the initial focus of agency theory was on the relationship between the owner (principal) and the manager (agent) in the firm, it was later extended to other types of relationships, including the relationship between supervisors and subordinate employees.

The basic premise of the agency relationship and the occurrence of agency costs is the imperfect alignment of interests between the principal and the agent, which leads to potentially opportunistic behavior due to information asymmetry. In the pharmaceutical industry, the typical focus of the sales agent is on maximizing sales, since his personal income depends on the sales he generates. The manager's perspective on success is more complex, as he or she seeks various other goals in addition to sales (cost efficiency, profitability, market share, etc.). In this particular relationship, agency problem can still arise due to the manager having limited ability to control the sales agent's behavior, and therefore there is a possibility that he may overspend or shirk while on the job. Thus, the sales agent maximizes his utility while the company bears unnecessary costs that could be eliminated or reduced with minimal loss of sales efficiency.

For this research, we conducted a survey involving 30 sales agents in a pharmaceutical company in Croatia. Based on agency theory, the aim of this paper is to examine some of the factors that influence the relationship between manager and sales agent and to determine whether agency costs, if they can be identified, influence the reduction of potential opportunistic behavior by the sales agent.

This paper is organized as follows. After a brief introduction, we provide a literature review of agency theory with the special emphasis on pharmaceuticals. The third part of the paper describes the methodology used, while the fourth part introduces the data used and then presents the results of the conducted research. The paper ends with a discussion and a conclusion.

2. Literature review

The theoretical background for this study lies in agency theory, i.e., the relationship between two contracting parties, the company manager (principal) and the sales agent (agent) in the pharmaceutical industry.

Agency theory from the perspective of Jensen and Meckling (1976) interprets the principal-agent relationship through the relationship between the owner and the manager of the company. According to Jensen and Meckling, the agency relationship implies a relationship in which the principal delegates a certain level of decision-making authority to an agent. The problem with agency relationships lies in the information asymmetry in favor of the agent, which can lead to the agent's potentially opportunistic behavior. Opportunism is expected due to the theoretical assumption of self-interest behavior and

the notion that it could be resolved through careful and deliberate contracting (Cohen & Holder-Webb, 2006). The focus of agency theory is therefore on creating a relationship that minimizes opportunistic behavior on the part of the agent, i.e., ensures behavior on the part of the agent that is consistent with the interests of the principal.

Also, agency theory expects that contract between principal and the agent will be incomplete. From the theoretical point of view, all contracts are incomplete due to bounded rationality, which disables pre-forecasting all potential future events, and information asymmetry (Hart, 2017).

According to Jensen (1986), the principal cannot ensure that the agent makes decisions that are in the best interest of the principal at zero cost. Therefore, the principal-agent relationship is governed by a compensation mechanism through which the principal maximizes its utility by optimally structuring three types of agency costs: monitoring costs, bonding costs and residual losses. Through monitoring costs, the principal attempts to limit the agent's opportunistic behavior. In addition, the principal may allow the use of firm resources to minimize the agent's behavior that is incompatible with the principal's interests.

Monitoring and bonding expenditure move in opposite directions, i.e., the increase in control costs is accompanied by a decrease in bonding costs and vice versa. Even with control and bonding, there is still the possibility of divergence between the principal's and the agent's decisions, resulting in residual losses-costs that cannot be eliminated or their elimination is not economically justified.

The principal-agent model has been widely accepted and discussed in academia and has been extended over time to apply the classical position, where the principal is the owner and the agent is the manager, to other relationships. Hill and Jones (1992) argue that agency theory can be used to explain the nature of contractual relationships among a firm's stakeholders such as employees, customers, suppliers, and others. This idea arises from the central position that a manager occupies in a nexus of contracts, that is, in a collection of contracts between parties (stakeholders) that together constitute a firm. In their argument, managers of a firm occupy a unique role because they stand in the nexus of contracts that constitutes the firm and are the only party who enter into contractual relationships with all other stakeholders. The stakeholder-agency approach represents a generalization of the principal-agent problem, where the maximization of utility demanded by employees, customers, or suppliers reduces the pool of resources that could be used to maximize the growth rate of the firm. Therefore, this view emphasizes a conflict between managers and all other stakeholders. Therefore, other authors following this approach have applied the agency problem in analyzing the relationships between the parent company and its subsidiaries (Mudambi & Pedersen, 2007), the relationships between manufacturer and distributor (Lassar & Kerr, 1996; Katunar et. al., 2022), and the relationships between buyer and supplier (Mishra et al., 1998; Whipple, Roh, 2010; Steinle et al., 2014; Yan, Kull, 2015; Yang, 2016), where the supplier has the advantage of information asymmetry.

In this paper, the analysis focuses on conflicts of interest between managers and sales agents, the most influential group of employees in the wholesale of pharmaceutical products. Recent relevant research addressing agency costs in the pharmaceutical industry has taken several directions: Xujin, Shuxing, and Jing (2020) use the model to compare direct sales, resale, and agency sales; Hasan, Molla, Khan (2019) analyzed the relationship between corporate governance elements and audit committee characteristics (audit committee size, independence, and expertise) with profitability, Yoon (2017) analyzed the relationship between the pharmaceutical industry and the medical profession in the stakeholder agency theory argument explained above, while Tang (2016) and Tang and Wo (2020) addressed double agency problem between physicians, patients, and pharmacists.

Our focus on the relationship between sales agents and the management of their firms stems from the specific power relations between these groups in firms and in industries where financial outcomes are strongly influenced by salespeople's motivation and skills. We believe that there are commonalities between sales agents share with prize fighters. Prize fighter is a term commonly associated with professional boxers, kickboxers, mixed martial artists, and athletes in other professional combat sports. Their distinctive feature is that their income is directly dependent on their individual in-ring results in a fight with a competitor. In the business world, similar rules apply to sales agents (salesmen in the real estate, insurance, telecommunications, pharmaceutical industries, etc.): unlike most of their colleagues in stores, their prize (salary and other benefits) is a direct result of their individual sales success. This specificity is the result of their involvement in a highly competitive environment, where field work with their clients (visiting their clients and potential customers) that selling agents do have the largest contributions to their performance. High work performance in a described environment is not easy for most workers to learn and maintain, so the performance of selling agents is usually directly related to their earnings. Therefore, we can consider sales agents as prize sellers.

However, although their earnings are the direct result of their sales performance, sales agents in the pharmaceutical industry usually cannot be efficiently managed by work performance alone as a coordination mechanism. The high proportion of field work performed by sales agents makes it at least partially impossible for their supervisors to coordinate through direct supervision - i.e., the effectiveness of monitoring their work is more limited than for most other positions within a company (hierarchy). This increases the likelihood of undesirable behavior by salespeople, such as on-the-job consumption, shirking, etc. Differences in utility maximization goals between selling agents and their management therefore lead to agency problems and, consequently, agency costs.

3. Methodology

Although agency theory is well established in academia, attempts to conduct an empirical analysis of inefficiency that is the result of misalignment

of interests between principal and agent are always challenging. In this research, we conducted a series of interviews with managers and other employees of the Croatian branch of a multinational pharmaceutical company and then created a questionnaire covering all sales agents within this branch. The interviews with the managers allowed us to shed light on their perspectives regarding the effectiveness of their control mechanisms and the establishment of a balance between monitoring and bonding costs. The survey of sales agents conducted through the questionnaire allowed us to better understand their perspectives on the same issues. The data obtained from the questionnaire were analyzed using appropriate descriptive statistics methods, some of which are presented in the following part of this paper. Although all 30 sales agents in the branch participated in the survey, some of the methods we used (Mann-Whitney and Kruskal-Wallis nonparametric tests) unfortunately did not yield statistically significant results due to the relatively small sample size.

4. Empirical data and analysis

For this research, we have chosen a foreign pharmaceutical company that has been in existence for over 120 years, while its branch in Croatia has been operating for over 10 years. The company's branch has experienced constant growth since its arrival in Croatia. In the last 4 years, operating revenues increased by more than 250%, while operating expenses increased by almost 270% due to the COVID-19 situation. During the same period, the number of employees increased by only 22%. The company has made a profit during the entire period under review.

During our research, 30 sales agents filled out our questionnaire, while interviews were conducted with a manager. 60% of the respondents are women and 40% are men. 60% of the respondents are between 31 and 40 years old, 23% are younger than 30 years and only 17% are older than 41 years. Most of the employees (40%) have been working in the Croatian establishment between 6 and 10 years, 33% have been working there for less than 5 years, while only 24% have been working for more than 10 years. These data are not surprising, considering that the company branch is constantly growing and hiring new employees, while it has been operating in Croatia for just over 10 years. All employees have a college degree (bachelor's or master's), while only one employee has a scientific master's degree or PhD.

In discussions with the branch manager, after explaining the theoretical idea of agency costs, we jointly tried to identify these costs in their branch. As the main contributors to the costs of monitoring the sales agents, we identified their two complementary IT systems, the cost of hiring IT an expert to maintain the systems, and the cost of hiring four area managers whose main task is to monitor the work of their 30 sales agents. In addition, there are the costs of maintaining cycle meetings, which the manager considers to be a control cost rather than a bonding oriented cost. As expected, bonding costs were much fuzzier and therefore more difficult to determine. In the end, in estimating

bonding costs, we included the bonuses that sales agents receive, as well as leasing costs and the ongoing costs of the cars that sales agents use. It is easy to argue that a car is not a bonding cost for a sales agent's work, but a normal car. However, since a car is automatically provided to each sales agent regardless of their current needs, and this car is available for both work and personal use (with very few restrictions), it can be considered a bonding cost. Otherwise, if the company were seeking cost-effective use of its vehicles, it could limit their number and availability to only those instances when an agent needs a vehicle for field work. However, the company does not have data on the cost portions of its vehicles that can be associated with sales efforts as opposed to bonding costs. Some residual agency costs for on-the-job consumption have been overlooked because they are difficult to estimate and monitor. These costs include unnecessary representation expenses and similar inefficiencies.

Comparing the average annual amount of identified representation costs to the operating costs of the Croatian office in 2019 (the last year before the Covid-19 outbreak and the irregularities it caused), their share is up to 7.4% of all expenses. The share of monitoring costs amounts to 3.45%. It should be noted that the cost of hiring four area managers accounts for more than half of these costs, which is doubtful, since undoubtedly not all the work of area managers can be related to the monitoring of sales agents. The cost of bonding reaches up to 3.98% of the total expenses of the branch. If dubious motor vehicle costs were converted so that only one-third of their total value was attributable to real bonding costs (meaning that ⅔ of motor vehicle costs are regular business-related expenses), the percentage of the bonding cost in total operating expenses would drop to 3%. Although these percentages for agency costs seem modest and acceptable, it should be noted that they do not include the above-average salaries of sales agents, as they are considered regular business expenses for the demanding tasks of prize sellers.

In the second part of the empirical research we conducted a questionnaire among sales agents (the structure of the sample is shown in Table 1). The questionnaire was created via Google Forms in April 2021 and answered by all sales agents (account managers) at the same hierarchical level in the Croatian branch. All respondents have higher education, most of them (28) have a master's degree.

Table 1: Structure of respondents in the survey

Total	**30**
male	12
female	18
Average overtime (weekly)	
2-4 h	19
4-8 h	9
8-10	2
Age	
25-30	7
31-40	18
>40	5

The lack of statistically significant differences among the analyzed subgroups of respondents indicates that the size of the sample limits the depth of the possible analysis. Although we are aware of this limitation, increasing the size of the sample in this research was not possible. Expanding the research to other companies, even in the same industry, would mean analyzing other contractual relationships (different nexus of contracts), which would not serve the intended purpose.

5. Results and discussion

Job satisfaction among sales agents is high, with more than half of the respondents giving it the highest rating (Figure 1). Although some differences were observed between the groups on selected criteria (Table 2), the nonparametric statistical tests performed showed no statistically significant differences.

Figure 1: Work satisfaction

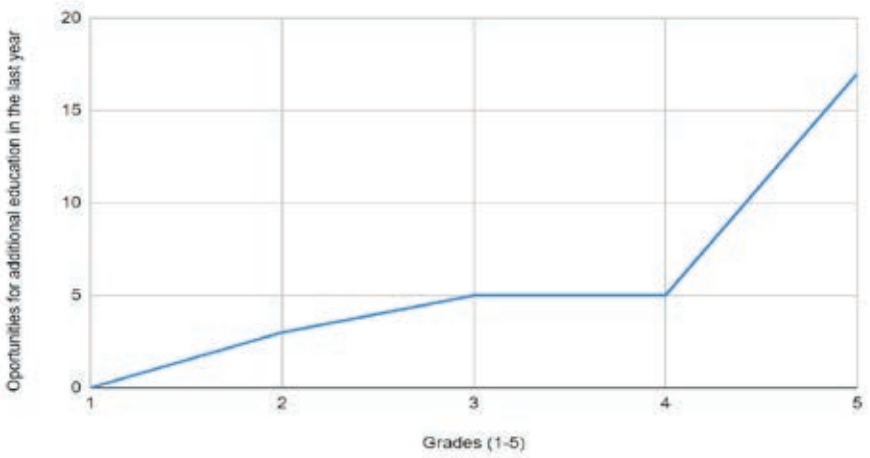


Table 2: Work satisfaction (grades 1-5 with 5 being the highest)

Average all	4.07
St. dev.	0.83
Male	4.17
Female	4.00
2-4 h of overtime	4.05
4-8 h of overtime	4.22
8-10 of h overtime	3.50

In evaluating their motivation for work assignments, respondents still chose high scores, with the highest score again being mode (Figure 2), but on average across the general sample and all but one subgroup, the results were slightly lower than for overall job satisfaction (Table 3).

Figure 2: Motivation for work assignments

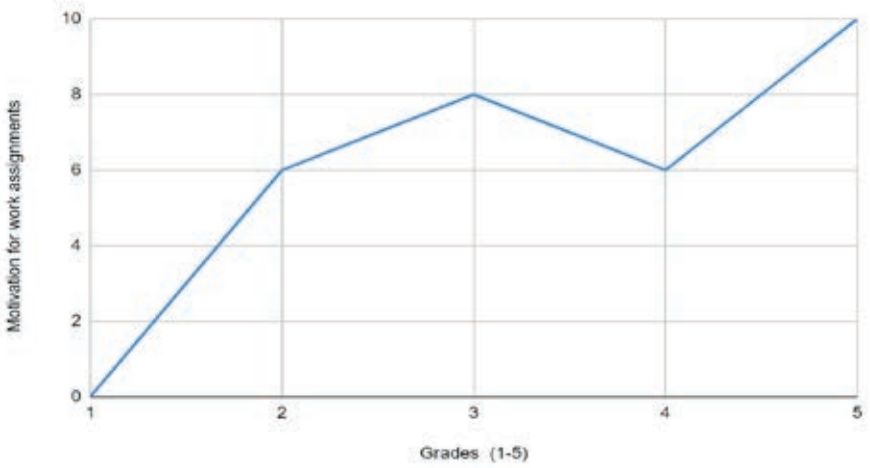


Table 3: Motivation for work assignments

Average all	3.67
St. dev.	1.15
Male	3.92
Female	3.50
2-4 h of overtime	3.32
4-8 h of overtime	4.44
8-10 of h overtime	3.50

The lowest average value (3.17) in this set of questions was found in the evaluation of opportunities for personal development (Figure 3 and Table 4). The results between the groups are very similar, so it seems that although prize sellers are satisfied with their job, they do not perceive it as good for their own development.

Figure 3: Opportunities for personal development

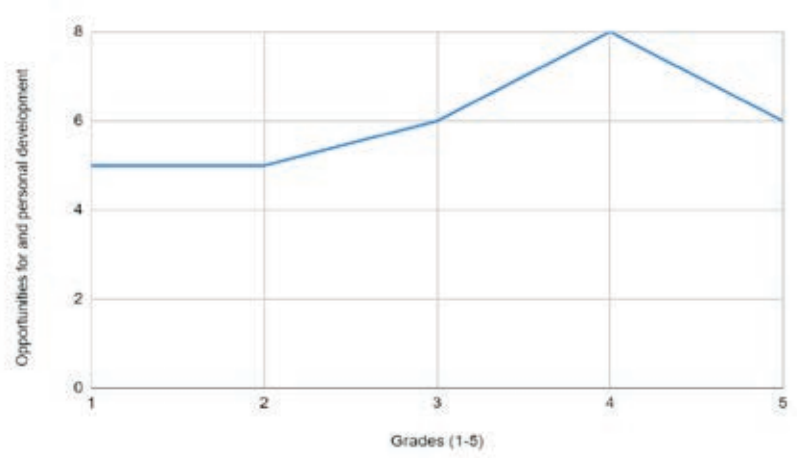
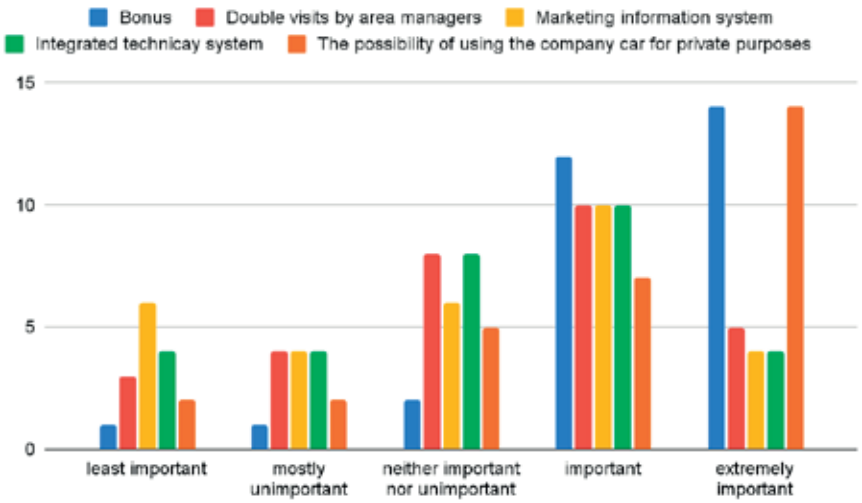


Table 4: Opportunities for personal development

Average all	3.17
St. dev.	1.39
Male	3.17
Female	3.17
2-4 h of overtime	3.05
4-8 h of overtime	3.44
8-10 of h overtime	3.00

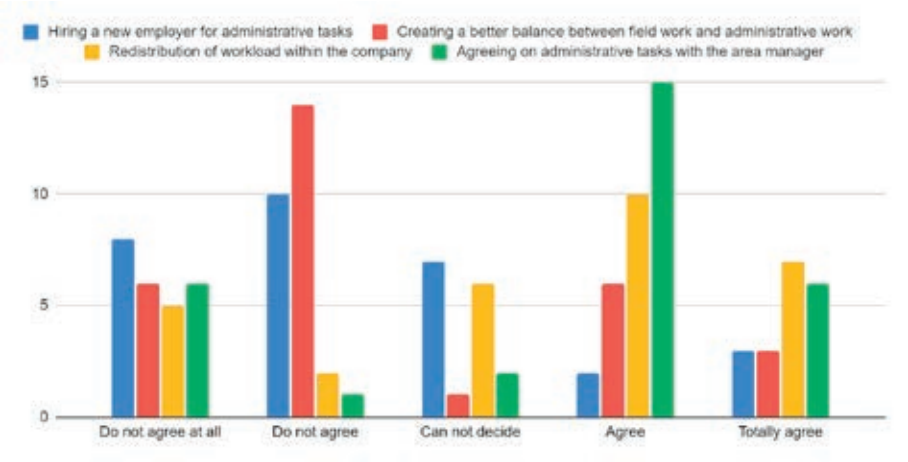
The perceptions of various mechanisms that we identified as part of the agency costs are shown in Figure 4. The bonus and the possibility to use the company car also for private purposes were part of the identified bonding costs, while IT systems and monitoring are part of the control costs. It can be seen that all mechanisms were perceived as at least important (with mode being either important or extremely important to all). However, the bonus and vehicle use mechanisms (i.e. bonding mechanisms) were rated as at least as important (i.e. important or very important) by 87% and 70% of respondents, respectively, while other mechanisms were rated as important (or more) by 50% of respondents or less.

Figure 4: The perceived importance of various bonding and monitoring mechanisms



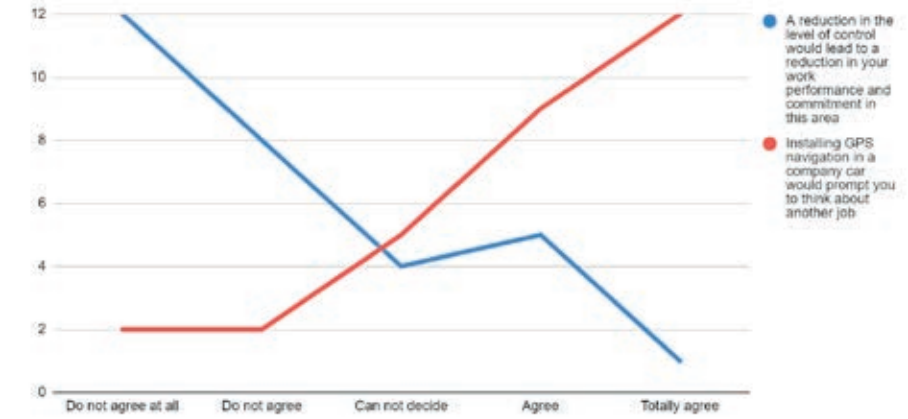
Since the interview results showed that sales agents find administrative work to be the least satisfying part of their job and work that limits their potential sales performance, a number of questions in the questionnaire were directed at weighing possible solutions to reduce their administrative workload. It may come as something of a surprise that 70 and 57 percent of respondents, respectively, cited “agreeing on administrative tasks with the area manager” and “redistributing workload within the company” as options they agreed (or strongly agreed) with. At the same time, the majority of respondents rejected the proposed options of hiring additional administrative staff and creating a better balance between field and administrative work. This suggests that sales agents do not think there is too much administrative work in general, but simply that some of their administrative work should be reallocated to their area managers. This conclusion could be consistent with the fact that area managers are perceived by managers as having primarily the function of supervising rather than supporting the sales staff.

Figure 5: Weighing the proposed options to decrease the amount of administrative workload



The curves in Figure 6 show sales agents' perception of being monitored. The sloping curve (blue line) shows that respondents do not believe that decreasing levels of supervision would lead to lower job performance, i.e., they do not believe that their job performance is affected by supervision. At the same time, although they previously indicated high job satisfaction, they would consider switching if the company installed GPS tracking systems in the company cars they use.

Figure 6: The perception of monitoring



6. Conclusions

The theoretical contribution of this paper stems from the identification of monitoring and bonding costs in the relationship between sales agents and managers in the pharmaceutical industry. The results of our research show that the manager (principal) employs monitoring and bonding mechanisms to align his interests with the interests of the sales agents on whose job performance he also depends.

To conduct this research, we have chosen the pharmaceutical industry because of its specificity. As mentioned earlier, the sales agent's earnings are directly related to his efficiency (by maximizing sales), which could lead to the conclusion that the interests of the sales agent and the manager are identical. However, maximizing sales is not the manager's only interest, leading to potentially opportunistic behavior by the sales agent. Considering the fact that field work, which constitutes the majority of the sales agent's work, entails a lower possibility of direct control and a greater degree of freedom for a sales agent, we concluded that agents in this industry are not used to control mechanisms and are not willing to accept them without disapproval. Because of the special nature of the work, the sales agent responds better to bonding mechanisms. Effective control is more meaningful and easier to enforce in simpler technical occupations where contracts are more complete due to standardization of procedures. In the observed pharmaceutical company, the manager relies more on bonding mechanisms, the most important of which for sales agents are bonuses and the use of cars for personal purposes. Recognizing the relative inefficiencies of monitoring results in significant savings for the manager and an increase in employee satisfaction.

These results are inconclusive due to the limited sample size, but to some extent confirm our assumption that sales agents are prize sellers, i.e., that their job performance is primarily incentivized by prize rather than monitoring. It could be reasonably argued that most workers would rather receive a prize than a control for their efforts. However, sales agents who want to be successful at their jobs must have above-average persistence and social intelligence. In addition, in the pharmaceutical industry and other industries that require knowledge and education to sell products, along with the need for field operations, effective supervision could prove difficult and expensive. Therefore, in an effort to minimize the overall agency cost in a relationship between managers and sales agents, it is beneficial for all parties to opt for bonding. This is especially true for successful companies in profitable industries.

Our recommendations for further research include selecting a larger company for analysis (to increase the sample size) and conducting a survey on more than one company. Also, to draw better conclusions about the impact of agency costs on aligning the interests of principals and agents, data for more than one year could be beneficial. Increasing the size of the sample within a firm and increasing the number of included firms would allow the use of better statistical and econometric tools.

Acknowledgment

This paper has been financially supported through project ZIP UNIRI 130-10-20 by the University of Rijeka.

References

1. Cohen, J. R. & Holder-Webb, L. (2006) “Rethinking the Influence of Agency Theory in the Accounting Academy”, Issues in Accounting Education, Vol. 21, No. 1, pp. 17-30.
2. Hill, C.W. & Jones, T. M. (1992) “Stakeholder-agency Theory”, Journal of Management Studies, Vol. 29, No. 2, pp. 131-154.
3. Hasan, M.T., Molla, M. S. & Khan, F. (2019) “Effect of Board and Audit Committee Characteristics on Profitability: Evidence from Pharmaceutical and Chemical Industries in Bangladesh”, Finance & Economics Review, Vol. 1, No. 1, pp. 64-76.
4. Hart, O. D. (2017) “Incomplete Contracts and Control”, American Economic Review, Vol. 107, No. 7, pp. 1731-1752. DOI: 10.1257/aer.107.7.1731.
5. Jensen, M.C. & Meckling, W.H. (1976) “Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure”, J. Financ. Econ., Vol. 3, pp. 305–360.
6. Jensen, M.C. (1986) “Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers”, Am. Econ. Rev., Vol. 76, pp. 323–329.
7. Katunar, J., Kaštelan Mrak, M. & Zaninović, V. (2022) “Implications of Mediated Market Access—Exploring the Nature of Vertical Relationships within the Croatian Wine Industry”, Sustainability, Vol. 14, No. 645, pp. 1-16, https://doi.org/10.3390/su14020645
8. Lassar, W. M. & Kerr, J. L. (1996) “Strategy and Control in Supplier – Distributor Relationship: An Agency Perspective”, Strategic Management Journal, Vol. 17, pp. 613-632.
9. Mishra, D. P. et. al. (1998) “Information Asymmetry and Levels of Agency Relationships”, Journal of Marketing Research, Vol. 35, No. 3, pp. 277-295.
10. Mudambi, R. & Pedersen, T. (2007) “Agency Theory and Resource Dependency Theory: Complementary Explanations for Subsidiary Power in Multinational Corporations”, SMG Working Paper No. 5.
11. Steinle, C. et. al (2014) “Information Asymmetries as Antecedents of Opportunism in Buyer-Supplier Relationships: Testing Principal Agent Theory”, Journal of Business-to-Business Marketing, Vol. 21, No. 2, pp. 123- 140.

12. Thang, M. C. (2016) “Medical Provider Agency and Pharmaceutical Demand with Universal Coverage: Evidence from Taiwan”, Available at SSRN: https://ssrn.com/abstract=2872116, http://dx.doi.org/10.2139/ssrn.2872116
13. Thang, M. C. & Wu, Y. N.(2020) “Medical providers as double agents in a universal health care system: evidence from generic pharmaceutical adoption in Taiwan”, Empire Econ, Vol. 59, No. 1, pp. 169–203, https://doi.org/10.1007/s00181-019-01674-9
14. Whipple, J. M. & Roh, J. (2010) “Agency Theory and Quality Fade in Buyer Supplier Relationships”, The International Journal of Logistics Management, Vol. 21, No. 3, pp. 338-352.
15. Xujin, P., Shuxing, S. & Jing, S. (2020) “Direct Selling, Reselling, or Agency Selling? Manufacturer’s Online Distribution Strategies and Their Impact”, International Journal of Electronic Commerce, Volume 24, No. 2, pp. 232-254, https://doi.org/10.1080/10864415.2020.1715530
16. Yan, T. & Kull, T. J. (2015) “Supplier Opportunism in Buyer-Supplier New Product Development: A China - U.S. Study of Antecedents, Consequences, and Cultural/Institutional Contexts”, A Journal of the Decision Sciences Institute, Vol. 46, No. 2, pp. 403-456.
17. Yang, Y. (2016) “Reframing Buyer-Supplier Agency Problems Beyond the Dyad”, doctoral dissertation, Arizona State University
18. Yoon, P. K. (2004) “An Agency Theory Perspective On Physician Interactions With The Pharmaceutical Industry”, Academy of Management Proceedings, Published Online:13 Dec 2017, https://doi.org/10.5465/ambpp.2004.13863045