

HOW TO IMPROVE TEAM EFFECTIVENESS THROUGH GROUP PROCESSES: AN EXAMPLE IN THE AUTOMOTIVE INDUSTRY

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Incrementar la efectividad de los grupos y equipos de trabajo es fundamental en cualquier organización, y más, durante los periodos de crisis económica. Para diseñar un equipo, formar un grupo u optimizar su trabajo, es preciso considerar las tareas, los procesos y los resultados. Siendo los equipos una herramienta clave en la competitividad del sector de la automoción, en este artículo nos enfocaremos en cómo mejorar el desempeño y la efectividad de los equipos de producción de este sector en las industrias españolas, a través de tres procesos, desarrollo grupal, identificación con el grupo y potencia del equipo. Los resultados indican que estos procesos predicen el 57% del desempeño grupal y especialmente dos de los criterios de efectividad utilizados en el sector (absentismo y orden e higiene en el lugar de trabajo). Discutiremos la utilidad de estos resultados para gerentes y líderes de equipos, con el objetivo de favorecer la efectividad de los equipos de producción del sector.

Palabras claves: Equipos de trabajo, Efectividad, Desempeño, Procesos grupales, Automoción.

Increasing group and team effectiveness is fundamental for any organisation, especially during periods of economic crisis. In order to build or design a team or to optimise its work, it is necessary to consider tasks, processes and results. Given that teams are a key tool for competitiveness in the automotive sector, this paper focuses on how to improve the performance and the effectiveness of production teams in Spain's automotive industry through three processes: group development, group identification, and team potency. The results show that these processes predict 57% of group performance, and in particular two of the effectiveness criteria used in this sector: absenteeism and order and hygiene in the workplace. We discuss the usefulness of these results for managers and team leaders in order to improve team performance and effectiveness in the automotive sector.

Key words: Work teams, Effectiveness, Performance, Group processes, Automotive sector.

En Spain the automotive industry is a strategic sector for the economy and the financial impact of the sector is expected to be close to four billion euros between 2011 and 2015, according to the Plan Integral de Política Industrial 2020 [Comprehensive Plan for Industrial Policy 2020] (PIN 2020; Servicio Público de Empleo Estatal [State Public Employment Service], 2011). This industry has incorporated working groups and teams into its management style for almost three decades (Osca, Bardera, García-Salmone & Urien, 2011) and, given the competitiveness, the fluidity of the market, the uncertain environments, etc., it is now crucial for businesses in general, and Spanish ones in particular, to understand the conditions that increase the probability of efficacy for their workgroups and teams. As they constitute a key tool in the competitiveness of this sector, in this article we will focus on how to improve the performance and effectiveness of production teams in the automotive sector in Spanish industry through group processes (group

development, group identification and team potency), based on the results of our study.

To do this, we briefly point out the current importance of the Spanish automotive industry and its work teams, explaining what we mean by workgroups and teams, the importance of group processes for their effectiveness and when we can say that a team is effective. Then we present the results of most practical interest, from our research in the Spanish automotive sector. Finally, we discuss the usefulness of these results for managers, supervisors and team leaders with the idea of illustrating how group processes can promote the effectiveness of the production teams in the sector.

THE SPANISH AUTOMOTIVE INDUSTRY AND WORK TEAMS

During the current economic crisis, the automotive industry was the last to experience a decline and one of the first in beginning to recover. For example, the automotive sector is the third largest export sector in Spain and contributes 16% of the country's total exports; it accumulates 10% of GDP and employs 1.8 million

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people directly or indirectly (Anfac, 2014; ICEX, 2014; Servicio Público de Empleo Estatal [State Public Employment Service], 2011). Furthermore, Spain remains the second largest European producer, after Germany, and it is Europe's leading producer of industrial vehicles.

For these reasons, the PIN 2020 aims to position the Spanish automotive industry as a priority sector when investing in and promoting long-term competitive projects, for example, the production of electric, hybrid and low emission vehicles, ensuring competitiveness in the manufacturing of vehicles and components. In addition to this, the automotive sector is one of the most advanced in terms of production techniques and procedures and is a school of professionals. Therefore it is always very important to take into account the knowledge and skills considered as priorities for improving performance in the occupations in this sector, including orientation to continuous improvement, teamwork and leadership (Servicio Público de Empleo Estatal [State Public Employment Service], 2011).

Why are these skills relevant? Mainly because in this sector different types of groups and teams are used (design, project, production, decision-making, etc.), with different objectives, level of autonomy, etc. The more knowledge and tools that this industry has available to optimise the aspects that can improve the effectiveness of the teams, the more interventions they will be able to implement that are enriching for them, and the more productive and profitable these will be for the companies.

WHAT IS MEANT BY WORK GROUPS AND TEAMS?

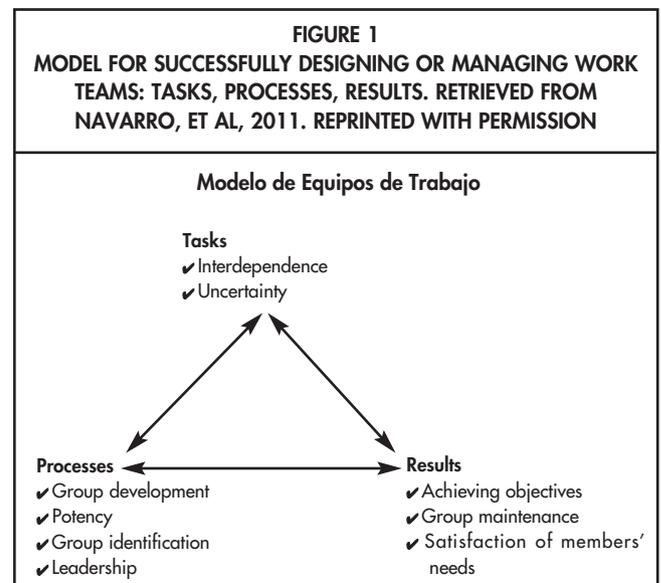
We use the terms group and team interchangeably in this article, regardless of the fact that the former are formed and the latter are built, because we share the idea of a continuum in which both possess the fundamental characteristics but at different levels. For the modern specialist literature, work groups and teams are dynamic and complex systems immersed in an organisational system. The tasks that they carry out require interaction among the members, coordination, cooperation and behaviours aimed at achieving the group goals and results (Rico, Alcover & Tabernero, 2010). Their size can vary between three and fifteen members, they are recognised within the organisation (they are formal groups), their goals are shared and assigned by the institution and all members report to the same leader (Kozlowski & Bell, 2003; Ilgen, Hollenbeck, Johnson & Jundt, 2005).

From a pragmatic perspective the interest lies in the teams' effectiveness, i.e., in their performance and results. We believe that an effective team is based on three key elements:

the tasks that must be performed, the particular processes any team must have, and the results obtained. These three elements permanently feed on each other and require simultaneous attention to promote successful teams (Navarro, Quijano, Berger & Meneses, 2011). Figure 1 shows the graphical representation of this model that will guide us in this article. Specifically, in this article we will focus on one of these elements, the group processes, and how these are key to understanding group effectiveness (performance and results) in the automotive sector.

ARE GROUP PROCESSES RELEVANT FOR EFFECTIVENESS?

It is well known that group processes take place within all groups and teams and much has been said about this in the scientific and reference literature. Now, why are these processes important? In short, because they relate to the effectiveness of the teams, since they affect the way the team members combine their skills and behaviours – individual resources, knowledge, skills and effort– to meet the demands of the task; i.e., they mediate the conversion of inputs into results (Kozlowski & Bell, 2003; Ilgen & Kozlowski, 2006). Therefore, if the team processes are functional, synergies are generated that promote interaction, the design of tasks and workflow, thus affecting the effectiveness of the whole organisation (Hackman, 1987). In fact, empirical evidence shows that improvements in team processes have a favourable impact on their efficacy and can be considered important predictors of performance (Kozlowski & Bell, 2003; Kozlowski & Ilgen, 2006; Osca et al., 2011). This is why, in our research, we will focus on three key processes of



production teams in the automotive industry: group development, group identification and team potency. Paying attention to these processes should lead to an impact that improves the efficacy of the teams.

To what do each of these three processes refer? Very briefly, group development refers to the characteristics of a workgroup or team that makes it perceived, both by observers and by the members themselves, as an authentic group and not as a mere aggregate of people (Meneses, Ortega, Navarro & Quijano, 2008). According to studies by Navarro, Meneses, Miralles, Moreno and Loureiro (2015), a highly developed group would be one whose members interact with each other on a regular basis, coordinate their behaviour –aimed at achieving the group goal– and identify with the team they belong to. It is feasible to measure group development, which can provide a quantitative assessment of the extent to which a group is a real group based on its development, regardless of the specific phase it is at (see Navarro et al, 2015).

Identification with the group refers to the perception that each member of the group has of the connection that unites it, in terms of considering himself¹ a member, being aware of how the group is perceived, and being proud to belong to it (Tajfel & Turner, 1979; Turner, Hogg, Oakes, Reicher & Wetherell, 1987). This process has also been associated with the disposition of the group to follow and promote compliance with group norms (e.g., Barreto & Ellemers, 2002). In addition, identification with the workgroup refers to the degree to which the employee, a member of a formal group in the company, feels that she belongs to it.

Finally, team potency refers to the collective belief of the group regarding their ability to successfully achieve the goal they have as a group (Guzzo, Yost, Campbell & Shea, 1993), including what they do to tackle the different tasks. Potency then refers to common beliefs that influence the subsequent achievements of the team and, in turn, these achievements feed back into the potency beliefs (e.g., Gully, Incalcaterra, Joshi & Beaubien, 2002).

As we have already mentioned, in our view, group development, identification with the group and potency are three key processes for a team to be effective to a greater or lesser degree. Based on previous research, it is expected that teams are more effective where there are collective perceptions of achieving good performance, where the members consider that they are highly developed teams (and not mere aggregates of people) and where the members identify with these teams. In this

working hypothesis, we have still to define what we mean by effectiveness when referring to teams.

WHEN IS A TEAM EFFECTIVE?

Following the normative model proposed by Hackman (1987), we can consider three criteria for evaluating the effectiveness of the team. First, the output, the performance standards set by the organisation that the group must achieve or exceed. Second, the conception of the group as a unit of execution, which means that the social processes involved in carrying out the work should maintain or improve the capacity of the members to work together in subsequent task forces. And third, the impact of the group experience of the individual members must satisfy, rather than frustrate, the personal needs of the group members. In short, the three effectiveness criteria we have considered, as proposed by Hackman are: 1) achieving the proposed objectives, 2) maintaining or strengthening the capacity of the team members to work together in the future, and 3) the group's attention to the needs of its members.

Returning to the relationship between processes and effectiveness, there are numerous investigations that have addressed this, including different types of studies (e.g., simulations, longitudinal, observational, multi-level, and ethnographic studies), myriad processes and states that emerge (e.g., cohesion, identification, team mental models, potency, etc.), various types of groups (e.g., software development, decision making, R & D, production, etc.), as well as multiple work environments (e.g., nuclear power plants, industry, healthcare sector, etc.). There are also various studies on the specific influence of each of the three processes that we have studied on effectiveness (see Kramer, 1991, Gully et al., 2002, Kozlowski & Ilgen, 2006, Srivastava, Bartol & Locke, 2006, Somech, Syna & Lidogoster, 2009, Stajkovic, Lee & Nyberg, 2009, Navarro et al., 2015). None have studied the three together, however, in production teams in the automotive industry.

Therefore, our research was aimed at studying the capacity of group processes (i.e., group development, identification and potency) to predict the performance and effectiveness of 72 production groups from five Spanish companies in the automotive sector. How did we do this? We administered a validated questionnaire with four scales measuring both processes and performance. Additionally, we measured the group results using six indicators of effectiveness for the groups, provided by the

¹Translator's note: From here onwards in the text, male and female pronouns will be used alternatively to avoid the use of 'he/she' and 'his/her'.



automotive companies themselves and common to all of them (absenteeism, order and hygiene, ideas for improvement, spending on auxiliary equipment, versatility or multitasking, and quality). To understand the extent to which the group processes evaluated predicted the performance and effectiveness of these teams, we used statistical analysis of the data. As all of the measures referred to the functioning of the teams or their results, we had to carry out a preliminary study to ensure that the group measures (resulting from the aggregation of the members' perceptions) were representative and that there was agreement among the members of the group on the evaluation of the processes studied.

RESULTS OF PRACTICAL INTEREST

We list below the most important results found in the 72 groups studied:

The three processes studied (group development, identification and potency) are significantly related to each other; for example, the more developed the group is, the greater its group identification and potency. The correlations showed values of around 0.4-0.5.

The processes studied predict between 40% and 43% of group performance, depending on the process. Performance was measured using a scale based on the previously mentioned normative model by Hackman.

The processes studied predict four of the six indicators of effectiveness used by the organisations. Specifically, the criteria of absenteeism, order and hygiene, improvement ideas and quality. The most important results were those relating to group development, which explained 16% of absenteeism, and team potency that predicted 15% of order and hygiene indicator. The team potency also displayed explanatory power on the criterion of improvement ideas (5%). And, taken together, the three processes also explained the indicator of quality (8%).

None of the processes showed a significant relationship with the criterion of spending on auxiliary material and multitasking.

Considering the three processes together, the predictability of both performance and effectiveness increases. The predictability of performance increased to 57%; and the indicators increased to 18% in the case of the criterion of absenteeism and 15% in that of order and hygiene.

In short, the process of group development, group identification and team potency predict an important part of the group performance as well as some of the group results, especially absenteeism and order and hygiene in work teams in the Spanish automotive sector.

THE USEFULNESS OF THE RESULTS FOR MANAGERS AND TEAM LEADERS

As we have mentioned in our research, we have studied the degree to which group processes predict the performance and effectiveness of production groups in five Spanish companies in the automotive sector. The results showed that the three group processes (i.e., group development, group identification and team potency) predict group performance, with a similar predictive power, jointly explaining 57% of performance.

In our view, this figure is of particular interest in two ways. Firstly, both the team potency and the group identification have been included in different models of team performance, so that in some companies they are already measured as part of their continuous improvement programs (see Stajkovic, Lee & Nyberg, 2009, Kramer, 1991). In such cases, one would only have to include the measurement of group development, in order to complement the diagnosis and increase the predictive ability of the final results achieved by the team. Secondly, we have used a brief tool, which is easy to apply and has shown useful results. This tool substantially reduces the time spent by the teams on evaluation, the financial investment of the company and the training requirements of the person in charge of diagnosis.

In terms of effectiveness, the relationship of the set of processes with absenteeism –explaining up to 18%– and order and hygiene at work –up to 15%– are findings with a clear practical interest for team leaders, supervisors and managers. Here absenteeism refers to the minimum level of absence of workers prescribed by the management of the organisation. The criterion of order and hygiene alludes to the correct use of tools and workspaces, as well as procedures relating to health and safety, a key criterion for industrial companies due to their typically strong emphasis on prevention matters. These results indicate that if we improve group development, identification and team potency, we will increase the results the team obtains with regards to maintaining orderly and clean work spaces, which will result in lower accident rates; and in turn we would reduce the level of absenteeism. The desirability of these changes goes without saying, because of their impact on the management of teams and improving their results.

We wonder why, for the criteria of improvement ideas, spending on auxiliary material, multitasking and quality, the processes studied showed either low or null predictive ability of effectiveness. We think that the training programs in versatility that companies in the sector have been offering to their employees for years, in order to



have a more flexible and adaptable workforce, may have influenced this result. Moreover, we also found that our results are consistent with previous findings on group cohesion and performance (e.g., Beal, Cohen, Burke & McLendon, 2003) in that they show a better predictive capacity of performance than of effectiveness. In short, the improvement in group processes (group development, identification and potency) impacts more positively on the performance of production teams than on their ultimate effectiveness.

It would be reasonable to ask why we did not include, in our research, indicators of effectiveness related to the quantity of production. The reason for not including this type of indicator was that, in the teams and organisations that we studied, the production level depends on the number of orders received in a given time. This criterion would, therefore, be beyond the control of the group.

In sum, the results show that the processes studied (group development, group identification and potency) are interrelated and predict group performance and two effectiveness criteria used internally by the automotive organisations that we studied (absenteeism and order and hygiene in the workplace). The important thing here is how the team leader or people managers in the organisation can articulate this knowledge and obtain the most benefit from it. On the one hand, as mentioned above, some of these processes are included in development plans for teams, regularly implemented by companies, and increasingly often organisations are investing in the development of their teams through planned change (see Kauffeld & Lehmann-Willenbrock, 2008). This reinforces the importance of including these processes in the diagnosis, as well as evaluating the weight of the presence of these three processes in the development plan in the light of these results, since high performance and good group results are the ultimate goals of any team.

Furthermore, when managers, supervisors and team leaders perform group diagnosis, design intervention programs or do their daily work, they should have information from the specific context in which they work and of interest to the type of group in question, in order to increase the chances for improvement and development. The information we provide here would contribute to this, as it is specific, up-to-date and empirical; in other words, it was obtained from the production teams in their working environment and provides an internal benchmark, not an external one, as it refers to the Spanish automotive industry.

We believe, cautiously, that our results are useful for

similar working environments and working groups for three reasons. Firstly, because we studied a large sample of teams (72 groups); secondly, they were real groups working in automotive companies; and finally, we used performance indicators used by the companies, which is rare information due to the difficulty in accessing it. One limitation that must be considered is that most of the data was obtained through questionnaires that were applied only once. Although this method provides a useful perspective, and so far it has been the most used in applied psychology, we are aware that it restricts the validity of the information obtained, limiting it to a specific point in time and a single source of evaluation. It would be ideal to study working groups for longer periods and to include different sources and types of measurement. However, in the workplace this would not be an easy, fast or economical task. On the other hand, we are confident that the information presented here provides concrete data that may promote specific actions for improvement.

CONCLUSION

The industrial sector in general and the automotive industry in particular are increasingly employing work teams and groups. The important role of group processes in the performance and results of production groups in automotive companies is information that is of a practical value to group leaders, supervisors and managers, for creating a competitive advantage in automobile manufacturing.

It is feasible to promote greater effectiveness and improved performance of groups that have already been formed by assessing the degree of presence of certain group processes (group development, identification and potency) at a given time; and promoting the planned training of teams through specific programs with a view to continuous improvement. Not forgetting that the daily work performance of both groups and their managers may also be affected favourably. On the other hand, the economic reasons stand out, both in terms of the time and resources required for the assessment of these processes, highly valued qualities in everyday group work in the employment context, particularly at this time of economic crisis in Spain and in sectors of such high priority as the automotive industry.

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