

## Management Lessons from Ants: A Literature Review

**Dr. Lal Muhammad**

Assistant Professor, Department of Business Administration, Sarhad University of Science & IT,  
Peshawar-Pakistan. Email: [lalmuhammad261@gmail.com](mailto:lalmuhammad261@gmail.com)

DOI: 10.5281/zenodo.6844255

### ABSTRACT

The basic purpose of this study is to highlight the management lessons from the Ants and incorporate our lives and organizations for a success. This is an explorative study in which different research papers, articles from internet and books are reviewed. Ant is a small living thing but it is considered a very organized and social insect. From the review of different sources, it is concluded that teamwork, planning for future, specializations of employees, division of labor, good communication network, Swarm Intelligence, risk taking, Self-Motivated and Self-directed, work hard, utilize the time in more productive way, feel ownership to employees, and not make any factor as a hurdle for getting job done.

**Keywords:** Management Lessons, Ants, Leadership, Team Work, Division of labor.

**Cite as:** Dr. Lal Muhammad. (2022). Management Lessons from Ants: A Literature Review. LC International Journal of STEM (ISSN: 2708-7123), 3(2), 1–8.  
<https://doi.org/10.5281/zenodo.6844255>

### INTRODUCTION

There are more than 10000 insect's species and there are only two insects Ants and Bees are only social insects who live together in organized colonies. Every colony of Ants consists of three casts i.e., Queen, Males and Workers (Britannica, 2020). Ants are the smallest creatures of world and mostly they are ignored to learn lessons from this small insect. Mostly the humans ruined them under their foots and some destroy them using the pest control medicines in their houses. Ants are also the creature of Allah and there is one complete Surah in the Quran in Chapter 27 namely Al Naml (The Ants). The ant's social life has been discussed in the Quran and mentioned two times in the Bible as well about the Ants. In the Bible (Proverb 6:6-8 "Go to the ant, you sluggard; consider its ways and be wise! It has no commander, no overseer or ruler, yet it stores its provisions in summer and gathers its food at harvest") and (Proverb 30:24-25 (King James Version) "There be four things which are little (smallest) upon the earth, but they are exceeding wise: The ants are a people not strong, yet they prepare their meat (food) in the summer; Ants are creatures of little strength Ants are a people not strong").

### Purpose of The Study

The section consists of background of the study. The content of manuscript must be contained Introduction, Literature Review, Methodology, Results & Analysis, and Conclusion & Recommendation.

## LITERATURE REVIEW

Ants are social insects who like to live in organized nest colonies that may be found in the ground, in huge piles on the soil, or even on the branches of a tree. Carpenter ants' nest on wood and may cause serious damage to structures. In contrast to the usual, certain species like army ants do not have permanent homes, but instead search for food during periods of movement to feed their large colonies. The queen or queens of an ant colony are solely responsible for ensuring the colony's existence by laying hundreds of eggs every day. When you observe the workers, you'll notice they don't have wings. They're female ants that don't mate and instead spend their time foraging for food, caring for their queen's offspring, tending to the nest, protecting the community, and more. The solitary purpose of male ants is to mate with the queen. They may die as a result of their actions (*Ants / National Geographic*, 2021). Ants connect with colony members via their exceptional senses. Antennae on other ants let them detect pheromones, which they produce and release into the environment. In addition, they may use their antennae or other body parts to contact each other. A touch signal is sent by an ant rubbing its body parts together, making sounds and vibrations. A wide range of data may be conveyed using these methods, from food availability to the existence of danger. Workers, soldiers, and queen ants are all types of ants in a colony, and they all have different roles to play. All of the employees are female, and their duties include feeding and caring for the considerably larger queen and her offspring. Fledglings that have developed wings will only mate with the queens and will thereafter perish. The wings of a queen are also present, although they are lost after mating. For a wide range of reptiles, amphibians, arthropods (including insects), birds, and mammals, ants constitute an important food source. A queen's life expectancy can't be extrapolated to include all ants; however, workers tend to live for far shorter periods of time (NWL, 2021).

Ants build hives in order to reproduce. Comparative studies may be conducted between these colonies and human civilizations (Mofett 2019), animals (Hölldobler and Wilson 2011; Mofett 2010), armies (Mofett 2011), farmers (Hölldobler and Wilson 2011), slaveholders (Topof 1990), and highway builders (Hölldobler and Wilson 1990). (Mofett 2010). In a news release,

it was reported that (Dussutour et al. 2004). When comparing ant social structures to human social structures, the potential of groups to grow in complexity is a recurring theme (Garnier et al. 2007). Armed ants and leafcutter ants' social systems are a product of their extreme social complexity (e.g., complex division of labor, elaborate supply chains). In contrast to other species with more complex social structures, the Argentine ant has a looser network of workers distributed across a much larger area, perhaps hundreds of kilometers away, allowing it to maintain an opportunistic way of life even as its colony grows in size (Moffett 2012). Different authors provided characteristics of Ants colonies which are summarized in Table 1.

Table 1 *Characteristics of Ants*

| Authors                | Characteristics of Ants  |
|------------------------|--|
| Moffett et al. (2021)  | <ul style="list-style-type: none"> <li>• Individuality and Identity</li> <li>• Absent Hierarchies and Leaders</li> <li>• Flat Organizations</li> <li>• Self-Organizations</li> <li>• Direct and Indirect Communications</li> <li>• Mistakes and Innovations</li> <li>• Specializations</li> <li>• Coordinated Labor</li> </ul> |
| Britannica Kids (2021) | <ul style="list-style-type: none"> <li>• Socialability</li> <li>• Team Work</li> <li>• Division of Labor</li> <li>• Division of work based on different classes in the nest</li> <li>• Social Stomach</li> </ul>   |
| Low (2011)             | <ul style="list-style-type: none"> <li>• Organized Cooperation</li> <li>• Task Sharing</li> <li>• Be United</li> <li>• Good Communication</li> <li>• Build and Grow like a family</li> <li>• Team Spirit</li> </ul>  |

|                             |   |
|-----------------------------|---|
|                             | <ul style="list-style-type: none"> <li>• Be industrious and Work Hard together</li> <li>• Care for one another</li> <li>• Be self-motivated and Self Directed</li> </ul>  |
| Cassil (2002)               | <ul style="list-style-type: none"> <li>• Build Permanent Homes</li> <li>• Establish and defend their territory</li> <li>• Take care of ill ants till healing or death</li> </ul>  |
| Baharat and Chandran (2021) | <ul style="list-style-type: none"> <li>• Planning for future</li> <li>• More interactive</li> <li>• Never lose sight from objectives</li> <li>• Complex and adaptive communication networks</li> <li>• Tireless working</li> </ul>                                  |
| Purohit (2015)              | <ul style="list-style-type: none"> <li>• Flexibility</li> <li>• Planning</li> <li>• Patience</li> <li>• Commitment</li> <li>• Team Work</li> <li>• Team Intelligence (Swarm Networks)</li> <li>• Leadership and Humanity</li> <li>• Communication Skills</li> </ul> |
| Anglesey (2022)             | <ul style="list-style-type: none"> <li>• Not intimidated by size of work</li> <li>• Value team works</li> <li>• Most organized</li> <li>• Save for rainy days</li> <li>• Get the job done</li> </ul>  |
| Falayi (2020)               | <ul style="list-style-type: none"> <li>• Prepare for the worst situations</li> <li>• Maximize the time</li> <li>• Prepare for the future</li> <li>• Utilize you network</li> </ul>  |

|                 |  |
|-----------------|--|
| Gordon (2016)   | <ul style="list-style-type: none"> <li>• Regulations without the central control</li> <li>• Unique odor security system</li> </ul>   |
| Eswar (2015)    | <ul style="list-style-type: none"> <li>• Ants are braver than Humans</li> <li>• Ignore the little diversions</li> <li>• Next generation is everyone's responsibility</li> <li>• Knowledge sharing</li> <li>• Adapt the surroundings.</li> </ul>                        |
| Ibanzo (2016)   | <ul style="list-style-type: none"> <li>• Diligent and hard working</li> <li>• Self-Motivation where size, lack and location not aa limiting factor</li> <li>• Excellent strategic planning, precision and organization skills</li> <li>• Teamwork and unity</li> </ul> |
| Ekekwe (2010)   | <ul style="list-style-type: none"> <li>• Working in Teams</li> <li>• Trust one another</li> <li>• Open in knowledge sharing</li> <li>• Work distribution based on capabilities</li> <li>• Diligent and focus working</li> <li>• Regrouping</li> </ul>                  |
| Sunderji (2018) | <ul style="list-style-type: none"> <li>• Don't accept defeat</li> <li>• Value Team Work</li> </ul>   |

## METHODOLOGY

This study is basically a literature review. Different articles, websites, and magazines are reviewed about the management lessons derived from the Insects.

## CONCLUSION

Indeed, Allah Created all the things in a perfect manner that if it is small like an Ant or large as an elephant all the things are created perfectly and provided them a way of life which is also an example for all the humans. Ant is a small living thing but Allah given them a complete way of life. Ants are considered as the most organized creature which taught us very important lessons for life and management. Islam is also a complete code of life but unfortunately, we humans are making distance from this peaceful and perfect code of life. Ants are living in a female dominant colony called Queen and her task to only lay eggs and other Ants are only taking care the Queen for this and provide her food and safe place for living. Ants are self-organized and self-motivated and work freely in the colonies. Ants have a very strong communication channel and they did not hide any information from the other ants. They share the information about food and other things and other ants come for help and work in a team and complete their tasks. From Table 1 as a human we must trust each other in the organization, do our tasks in the team work, divide the work as per the capabilities of the employees, always focus on work and their objectives, employees should be self-motivated be brave to handle all kind of situations, organizations and their employees must prepare themselves for worst situations and always think and plan for that situations, knowledge sharing would be appreciated, make a swarm network (group intelligence) instead of individualism, utilized their time efficiently and effectively, take care the values of each other's that working environment would be conducive for working, be committed with their work and organization, coordination in the organization and employees should be involved in the decisions and make them a sense of ownership in the organization. As the Ant colonies does not have central control system and every Ant is responsible for the betterment of their colonies. So, we human also need to take the responsibility and play a role to provide a very peaceful and self-directed society and the organization in which every member knows his / her task to be performed and know it that how it will be performed and then perform their duties in a responsible way that organization and society became an icon for other societies and organizations.

## ACKNOWLEDGMENT

I would like to thanks Qari Muhammad Sadiq for his valuable suggestions and inputs.

## REFERENCES

- [1] Anglesey, L. (2022). *5 Leadership Skills We Can Learn from Ants*. Retrieved April 25, 2022 <https://aboutleaders.com/5-leadership-skills-we-can-learn-from-ants/>
- [2] Bharath, A. C., & Chandran, S. (2021). Nature to Nurture – A Leadership Perspective. *International Journal of Trend in Research and Development (IJTRD)*, 27–32.
- [3] Britannica Kids. (2021) “Ant.” Retrieved April 25, 2022 <https://kids.britannica.com/students/article/ant/272758>.
- [4] Cassill D, Tschinkel WR, Vinson SB (2002) Nest complexity, group size and brood rearing in the fire ant, *Solenopsis invicta*. *Insectes Sociaux* 49: 158–163.
- [5] Dussutour A, Fourcassié V, Helbing D, Deneubourg JL (2004) Optimal traffic organization in ants under crowded conditions. *Nature* 428(6978):70–73
- [6] Ekekwe, N. (2010). *The Leadership Lessons of Ants*. Retrieved April 26, 2022 <https://hbr.org/2010/10/business-lessons-from-the-ants>.
- [7] Eswar, A. (2015). (6) *5 Life Lessons We Can Learn from Ants*. Retrieved April 25, 2022 <https://www.linkedin.com/pulse/5-life-lessons-we-can-learn-from-ants-ajay-eswar/>
- [8] Falayi, D. F. (2020). *Four Lessons Ants Can Teach Us About Leadership*. Retrieved April 25, 2022 <https://www.forbes.com/sites/forbescoachescouncil/2020/01/30/four-lessons-ants-can-teach-us-about-leadership/?sh=7ca12fdd580c>
- [9] Garnier S, Gautrais J, Theraulaz G (2007) The biological principles of swarm intelligence. *Swarm Intell* 1(1):3–31
- [10] Gordon, D. M. (2016). *Two lessons from ant colony organization | World Economic Forum*. Retrieved April 25, 2022 <https://www.weforum.org/agenda/2016/01/two-lessons-from-ant-colony-organization/>
- [11] Hölldobler B (1999) Multimodal signals in ant communication. *J Com Physiol A* 184(2):129–141
- [12] Hölldobler B, Wilson EO (2011) *The leafcutter ants: civilization by instinct*. WW Norton, New York
- [13] Ibanzo, C. (2016). *4 Lessons We Can Learn From The Ant*. Retrieved April 26, 2022. <https://medium.com/@carla.ibanzo/4-lessons-we-can-learn-from-the-ant-af7e6be038b>
- [14] Low, P. D. P. (2011). Learning Teamwork And Other Lessons From the Ants. *Business Journal for Entrepreneurs*, 2011(1), 101–116.
- [15] Mofett MW (2010) *Adventures among ants: a global safari with a cast of trillions*. University of California Press, Berkeley.

- [16] Mofett MW (2011) Ants and the art of war. *Sci Am* 305(12):84–89
- [17] Mofett MW (2012) Supercolonies of billions in an invasive ant: What is a society? *Behav Ecol* 23(5):925–933
- [18] Mofett MW (2019) The human swarm: how our societies arise, thrive, and fall. Basic Books, New York
- [19] Moffett, M. W., Garnier, S., Eisenhardt, K. M., Furr, N. R., Warglien, M., Sartoris, C., Ocasio, W., Knudsen, T., Bach, L. A., Offenberg, J., Moffett, M. W., & Garnier, S. (2021). Ant colonies: building complex organizations with minuscule brains and no leaders. *Journal of Organization Design*, 2021(10), 55–74.
- [20] Purohit, S. (2015). *Attributes of the ant that can be implemented in any business.* / *LinkedIn*. Retrieved April 25, 2022, <https://www.linkedin.com/pulse/8-attributes-ant-we-can-implement-business-sneha-mehta/>
- [21] Sunderji, G. (2018). *Leadership lessons from ants! - Turning Managers into Leaders.* Retrieved April 25, 2022 <https://www.turningmanagersintoleaders.com/leadership-lessons-ants/>
- [22] Topof H (1990) Slave-making ants. *Am Sci* 78(6):520–528

## BIOGRAPHY

Dr. Lal Muhammad is working as an Assistant Professor and Post-Graduate Coordinator in the Department of Business Administration at Sarhad University of Science & IT, Peshawar. He has more than 7 years of experience as a lecturer and undergraduate coordinator. He has published eleven research articles in well-reputed and HEC-recognized journals. He has vast expertise organizing workshops, seminars, and conferences. He is a formidable force at work, encouraging people to work diligently and achieve success with his positive attitude and unwavering enthusiasm. In the future, he would like to pursue research on more effective approaches to managing organizational culture and innovation.