


Work Motivation Profiles of the Millennial Generation

Perfiles de motivación laboral de la generación millennial

Jessica Rubiano-Moreno 

Universidad de Ciencias Aplicadas y Ambientales,
Bogotá – Colombia, jesrubiano@udca.edu.co

Carlos Alonso-Malaver 

Universidad Nacional de Colombia,
Bogotá – Colombia, cealonsom@unal.edu.co

Samuel Nucamendi-Guillén 

Universidad Panamericana,
Guadalajara – México, snucamendi@up.edu.mx

Carlos López-Hernández 

Universidad Panamericana,
Guadalajara – México, calopez@up.edu.mx

Camilo Ramírez-Rojas 

Pontificia Universidad Javeriana,
Bogotá – Colombia, ramirezcamilo@javeriana.edu.co

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Abstract

Purpose: This study aimed to determine characteristic profiles of the Millennial generation based on their sociodemographic features and motivational preferences regarding work. It contributes to the literature on Millennial motivation and provides insights for organizations seeking to better understand and manage said generation.

Design/Methodology: The study was conducted on a sample of 197 questionnaire responses from individuals in the Millennial generation who had work experience. The sampling was non-probabilistic



and did not consider aspects related to socioeconomic or education levels to broaden the coverage of the study. The data were collected through an online survey in Guadalajara, Jalisco, Mexico. Said data were examined using an analytical procedure—which involves a clustering algorithm to determine the optimal number of clusters—and logistic regression analysis—to identify significant variables that can explain the behavior of each group.

Findings: Two distinct motivational profiles were found among Millennials: (1) a group motivated by achievement and power and (2) another one inspired by affiliation and supervision group. It was also found that these two profiles are related to certain sociodemographic features, such as age and main breadwinner.

Conclusions: Understanding the motivational profiles of Millennials can help organizations better tailor their management practices and work environments to meet the needs of this generation. Likewise, organizations may need to provide several kinds of incentives and rewards to motivate different groups of Millennials. Future research in this area could explore the relationship between these motivational profiles and other outcomes, such as job satisfaction and turnover.

Originality: This study contributes to the literature on Millennial motivation by introducing a quantitative methodology to identify different motivational profiles and explore their relationship with sociodemographic features. The use of a clustering algorithm and regression analysis also contributes to the methodological approaches employed in this area of research. Focused on the Mexican context, this paper also provides insights into the unique cultural and economic factors that may influence Millennial motivation in this region.

Keywords: work motivation, Millennial generation, ipsative variables, clustering algorithm.

JEL classification: M12, M52.

Highlights

- This study aims to understand the work motivation profiles of Millennial workers in Latin America.
- These profiles can be identified to offer them portfolios of incentives tailored to their preferences.
- "Cooperative Millennials" are inclined toward teamwork, while their "competitive" counterparts prefer leadership roles.

Resumen

Objetivo: Este estudio tiene como objetivo determinar perfiles característicos de la generación de los *millennials* basados en características sociodemográficas y preferencias motivacionales relacionadas con su trabajo. El estudio pretende contribuir a la literatura sobre la motivación de los *millennials* y proporcionar ideas para las organizaciones que buscan comprender y gestionar mejor esta generación.

Diseño/Metodología: Se llevó a cabo en una muestra de 197 respuestas a un cuestionario proporcionadas por individuos de la generación de los *millennials* con experiencia laboral. La selección de la muestra no fue probabilística y no incluyó aspectos relacionados con el nivel socioeconómico o educativo para ampliar la cobertura del estudio. Los datos se recopilaron a través de una encuesta en línea en Guadalajara, Jalisco, México. Dichos datos se examinaron mediante un procedimiento analítico que incluye un algoritmo de agrupación (para determinar el número óptimo

de grupos) y un análisis de regresión (para identificar variables significativas que puedan explicar el comportamiento de cada grupo).

Resultados: Se encontraron dos perfiles motivacionales distintos entre los *millennials*: (1) un grupo motivado por el logro y el poder y (2) otro inspirado por la afiliación y supervisión. El estudio también encontró que estos perfiles están relacionados con ciertas características sociodemográficas, como la edad y ser cabeza de hogar.

Conclusiones: Comprender los perfiles motivacionales de los *millennials* puede ayudar a las organizaciones a adaptar mejor sus prácticas de gestión y entornos laborales para satisfacer las necesidades de esta generación. Igualmente, las organizaciones deberían proporcionar diferentes incentivos y recompensas para motivar a diversos grupos de *millennials*. Investigaciones futuras en esta área podrían explorar la relación entre estos perfiles motivacionales y otros resultados, como la satisfacción laboral y la rotación de personal.

Originalidad: Este estudio contribuye a la literatura sobre la motivación de los *millennials* al proporcionar una metodología cuantitativa para identificar diferentes perfiles motivacionales y explorar su relación con características sociodemográficas. El uso de un algoritmo de agrupación y análisis de regresión también es una contribución a los enfoques metodológicos utilizados en esta área de investigación. Enfocado en el contexto mexicano, también presenta información sobre factores culturales y económicos únicos que pueden influir en la motivación de los *millennials* en esta región.

Palabras clave: motivación laboral, generación *millennial*, variables ipsativas, algoritmo de agrupación.

Clasificación JEL: M12, M52.

Highlights

- Este estudio permite entender los perfiles de motivación laboral de los trabajadores *millennials* en el contexto latinoamericano.
- Estos perfiles motivacionales se pueden identificar para ofrecer portafolios de incentivos adecuados a sus preferencias.
- El perfil cooperativo de los *millennials* se inclina hacia el trabajo grupal y el perfil competitivo se inclina hacia roles de liderazgo.

1. INTRODUCTION

In several studies, it has been found that Millennials prioritize differently from previous generations (Baby Boomers and Generation X). For instance, while Baby Boomers placed a pronounced emphasis on traditional economic trajectories and material acquisition, Millennials exhibit a multifaceted prioritization that transcends mere financial prosperity. This cohort fervently espouses ideals like experiential enrichment, work-life balance, and sustainable practices, indicating a recalibration of value systems.

A study by Nielsen (2015) found that "staying fit and healthy" is the primary goal of Millennials. In second position is "making money," followed by "having time for family" and "having a satisfactory career". Interestingly, even within the expansive spectrum of the Millennial generation, diversity

flourishes. Different factors—ranging from age, gender, educational attainment, occupational sector, lifestyle choices, and income levels to accomplishments and accolades—contribute to the articulation of different profiles among them (Reeve, 2005). This nuanced mosaic refutes the notion of homogeneity, showing how individual trajectories can intersect with generational attributes.

A domain where these diversities noticeably manifest themselves is the realm of work. Even within the boundaries of a single organization, a dynamic range of Millennial profiles can coexist, each personifying distinctive aspirations, motivators, and career trajectories (Joshi et al., 2010; Kostanek & Khoreva, 2018). From the enthusiastic trailblazers seeking rapid growth to those prioritizing meaningful contributions over conventional success, the workforce encapsulates the vibrant tapestry of Millennial diversity.

Given this diversity, it becomes relevant to determine the motivational profiles of Millennials by studying their (a) sociodemographic characteristics; (b) intrinsic, extrinsic, and reward motivations; and (c) preferences regarding monetary and non-monetary incentives. With this information, companies can propose human talent strategies focused on the preferences of employees from this generation and motivate them at work.

Therefore, this study aims to determine characteristic profiles of the Millennial generation based on their sociodemographic features and motivational preferences regarding work. It was conducted on a sample of 197 questionnaire responses by Millennials using an analytical procedure that involves a clustering algorithm—to determine the optimal number of clusters—and regression analysis—to identify significant variables that can explain the behavior of each group.

The remainder of this paper is organized as follows. Section 2 presents the theoretical framework for the concept of the *Millennial generation* as well as their intrinsic motivations, which are the two foundations of this study. Section 3 describes the methodology implemented here to collect and analyze the data. Section 4 presents the research results according to the sociodemographic information obtained and the two proposed motivational profiles. Section 5 discusses the results obtained and compares them to those presented in the theoretical framework. Finally, Section 6 summarizes the most significant insights in this paper and proposes future lines of research.

2. THEORETICAL FRAMEWORK

Millennials are different from other generations (Mahmoud et al., 2020; Euromonitor International, 2023), and it is important to learn about these differences in terms of sociodemographic variables and from the perspective of motivation in the workplace. This section presents a theoretical framework for the concepts of the *Millennial generation* and work motivation.

The Millennial Generation

A generation is established when its members jointly experience a formative and similar event (Weber & Urick, 2017). Millennials are part of a generation that stands out for being known as "the children of technology" (Tapscott, 2008). Although there is no consensus on when this generation begins and ends, Kim (2018) and Saeed et al. (2018) refer to those born between 1981 and 1995.

Other authors differ from these years and include even those born in 1999 (Stein & Martin, 2015), or between 1981 and 2001 (Howe & Strauss, 1992). After them, 2001 marks the start of the next generation, known as Generation Z.

In countries such as the United States, it is one of the most diverse generations and also one of the most numerous (Hartigan, 2010). By 2015, Millennials represented 37% of the workforce in Canada (Mahmoud et al., 2020), and estimates indicate that they will constitute 75% of the global working population by 2025 (Stein & Martin, 2015). Hence, companies should understand their characteristics and behavior in order to attract them, as they represent the largest working generation (Kim, 2018). The Millennial generation has several distinctive characteristics that differentiate it from others (Mahmoud et al., 2020). Compared to Generation X and previous ones, Millennials are more extroverted, aware of a globalized world, technological, narcissistic, and self-centered and have more self-esteem (Lyons & Kuron, 2014; Twenge, 2014).

While within this generation there may be certain variations due to individual identities (Joshi et al., 2010), they share common characteristics. First, they are concerned about social causes and are especially interested in them (Stein & Martin, 2015; Abdullah et al., 2022), which is reflected in several aspects of their lives. For example, they buy clothes not only for fashion but also to support social causes (Groysberg & Abbott, 2016; Konstantinou & Jones, 2022), are more socially aware compared to other generations (Salam et al., 2022), and are more informed (Stein & Martin, 2015). Second, they buy and acquire products and services through social networks (Dabija et al., 2017), which have had a strong influence on both their apparel preferences and how they buy (Groysberg & Abbott, 2016). Millennial consumers have a strong preference for the internet (Dawar, 2016) and consider technology to be an essential part of their lives (Lebowitz, 2018).

The third common characteristic is the type of information sources they use. This generation is more informed than previous ones (Stein & Martin, 2015; Nnamboozee & Parumasur, 2016), who relied on "traditional" sources, such as print newspapers and television—where the immediacy of the news is not the priority. Their access to technology has generated a fourth distinctive feature: their dependence on smartphones and the use of social networks, which allow them to satisfy their need to post photos, personal news (such as products they like and buy) and share everything that happens in their lives (Sashittal et al., 2015).

Specifically, regarding work, Millennials differ from other generations in multiple aspects. First, they are used to receiving feedback at work more frequently than others (Stein & Martin, 2015). Second, they demand greater flexibility and independence in their work schedules (Stein & Martin, 2015) and vacation time (Twenge et al., 2010). Third, they have an entrepreneurial approach, which is reflected in the great importance they place on business strategies (Pontón Deluquez & Márquez López, 2016). Fourth, they *cyberloaf*, i.e., they use technology excessively and for personal purposes at work (Lim, 2002). It has been reported that, on an eight-hour workday, they can spend up to two of them using technology for personal reasons (Zakrzewski, 2016). They also waste more than twice as much time as Baby Boomers (Conner, 2013), i.e., those born between 1946 and 1964 (Mahmoud et al., 2020).

The fifth aspect that differentiates Millennials from other generations is that they find it difficult to separate their personal life from their work life. Millennials build social relationships and communicate more easily with friends and strangers online (Thayer & Ray, 2006). In addition, they

see the use of technology as part of their identity (Taylor, 2014). Sixth, their learning style differs from those of previous generations because they do not receive guidance or structured formal programs anymore (Kim, 2018). In addition, they believe they can access all kinds of information, which is always available just a few clicks away on the computer (Kim, 2018). Seventh, they consider themselves to be multitaskers (Kim, 2018) able to switch their attention between different media (e.g., laptops, smartphones, television) at least 27 times per hour on average, an additional 60% above other generations (Steinberg, 2012). Although other characteristics differentiate this generation from previous ones, those seven mentioned above are considered the most important. Using data collected during the COVID-19 pandemic, Rattanapon et al. (2023) proposed that millennials could be more engaged in an organization when there is greater job fit but lower group involvement. Meanwhile, job fit may convince Gen X workers to stay in their jobs for the long term.

Work Motivation

Motivation has been defined in multiple ways. According to Reeve (2005), motivation can be understood as the needs, thoughts, and emotions that guide a person's behavior (see Figure 1). Human motivation is also defined as an emotional state generated in a person as a consequence of the influence that certain motives exert on his or her behavior (Koenes, 1996). According to Moody and Pesut (2006), "Motivation is a values-based, psycho-biologically stimulus-driven inner urge that activates and guides human behavior in response to self, other, and environment, supporting intrinsic satisfaction and leading to the intentional fulfillment of basic human drives, perceived needs, and desired goals" (p. 17). Different variables influence motivation, such as personality or the properties of the perceived environment, which will cause changes in the motivation generated (Martínez, 2001). In general, motivation can be defined as the process of emergence, maintenance, and regulation of acts that produce changes in the environment and that are consistent with certain internal constraints, i.e., plans or programs (Bueno, 1993, cited in Soriano, 2001). According to Ryan and Deci (2000), "To be motivated means to be moved to do something".

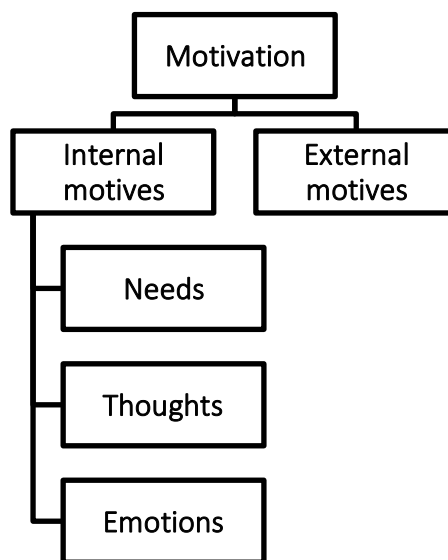


Figure 1. Hierarchy of sources of motivation
 Figura 1. Jerarquía de las fuentes de motivación

Source: own work based on Reeve (2005)

Other authors have claimed that people can engage in a certain behavior to obtain a reward, which can be intrinsic or extrinsic (Baard et al., 2004). Ryan and Deci (2000) proposed the Self-Determination Theory (SDT) (Deci & Ryan, 1985), distinguishing two types of motivation depending on the reasons or goals that drive an action: intrinsic and extrinsic motivation. Intrinsic motivation refers to an individual's internal cognitive and affective conditions that can induce positive or negative feelings and trigger behavior (Deci, 1975). In turn, extrinsic motivation refers to external conditions (such as other people or the environment) that generate feelings of pleasure or displeasure in the individual (Deci, 1975; Soriano, 2001).

In the 1920s, several motivation models based on impulse and reinforcement were designed by psychologists such as Thorndike (Law of Effect) and Woodworth and Hull (Impulse vs. Habit). They introduced the concept of "learning in motivated behavior" to psychology, proposing that rewards associated with past behaviors have an important influence on decisions about present or future behaviors (Steers et al., 2004).

Work motivation is a dynamic process of resource allocation directed towards a goal, and it involves other related variables such as time, place, and experience. Employees do not experience work motivation as an "on-off" phenomenon (Kanfer et al., 2017). Janssen et al. (1999) define it as "the degree to which a person wants to work well in his or her job, in order to achieve intrinsic satisfaction" (p. 1362). It affects the skills people develop, the jobs they want, and how they devote psychological process (such as attention), effort, and time to the direction, intensity, and persistence of their work activities (Kanfer et al., 2017).

Thus, work motivation is a dynamic process of ebb and flow in which multiple motives follow a four-stage cycle: (1) anticipation—the individual has an expectation; (2) activation and direction—the motive is activated by a stimulus; (3) active behavior and performance feedback—approaching or distancing oneself from a goal after evaluating the effectiveness of the behavior; and (4) outcome—the individual experiences the consequences or persists in the behavior depending on whether or not the motive has been satisfied (Soriano, 2001).

Several studies have assessed intrinsic and extrinsic motivation at work (Gerhart & Fang, 2015). Some authors hold that extrinsic motivation is more effective than its intrinsic counterpart (Mickel & Barron, 2008), while others (Grant, 2007; Cho & Perry, 2012; Manganelli et al., 2018) support the idea that workers seem to value jobs that have significant intrinsic aspects more than external factors (such as a promotion or salary). To assess work motivation, multiple instruments have been proposed, e.g., the Multidimensional Work Motivation Scale (MWMS) with six factors (motivation, extrinsic regulation—material, extrinsic regulation—social, introjected regulation, identified regulation, and intrinsic motivation). However, they have been used without distinguishing between Millennials and workers from other generations (Mahmoud et al., 2020), and none of them has been validated to be used with a Latin American population.

Evaluation of Work Motivation

The Work Motivation Questionnaire (WMQ, known as CMT in Spanish; Toro, 1992) has been used to diagnose motivation at work. It was designed and validated in Colombia, and it has been employed

since 1984. It measures 15 variables grouped into three conceptual categories. The validity and reliability of this instrument have been measured in the past (Toro Álvarez, 1998a). There have been five versions of this questionnaire over time to improve it, and the items that are representative of each variable have been standardized. Additionally, considering the psychometric conditions, reliability, and validity of this instrument, it is evident that, with each update, the psychometric indicators and the use of scales have been optimized. The WMQ has been used in different Latin American countries (such as Puerto Rico, Venezuela, Chile, Brazil, and Colombia, among others) in undergraduate and graduate research, business consulting, and scientific articles (Toro, 1991; Álvarez Ramírez, 2012; García Rubiano & Forero Aponte, 2014).

The motivational variables measured by the WMQ (Figure 2) are divided into three conceptual categories or dimensions: internal motivational conditions (*intrinsic motivations*), preferred means of obtaining desired rewards at work (*obtaining rewards*), and external motivational conditions (*extrinsic motivations*) (Toro Álvarez, 1998a; Toro Álvarez, 1998b). Each one of these dimensions contains five variables. Intrinsic motivations include *Achievement, Power, Affiliation, Self-Actualization, and Recognition*. Obtaining rewards encompasses *Dedication to the Task, Acceptance of Authority and Rules, Requisition, and Expectation*. Finally, extrinsic motivations are *Supervision, Work Group, Job Content, Salary, and Advancement Opportunities*. These three dimensions of the WMQ and their variables are detailed below.

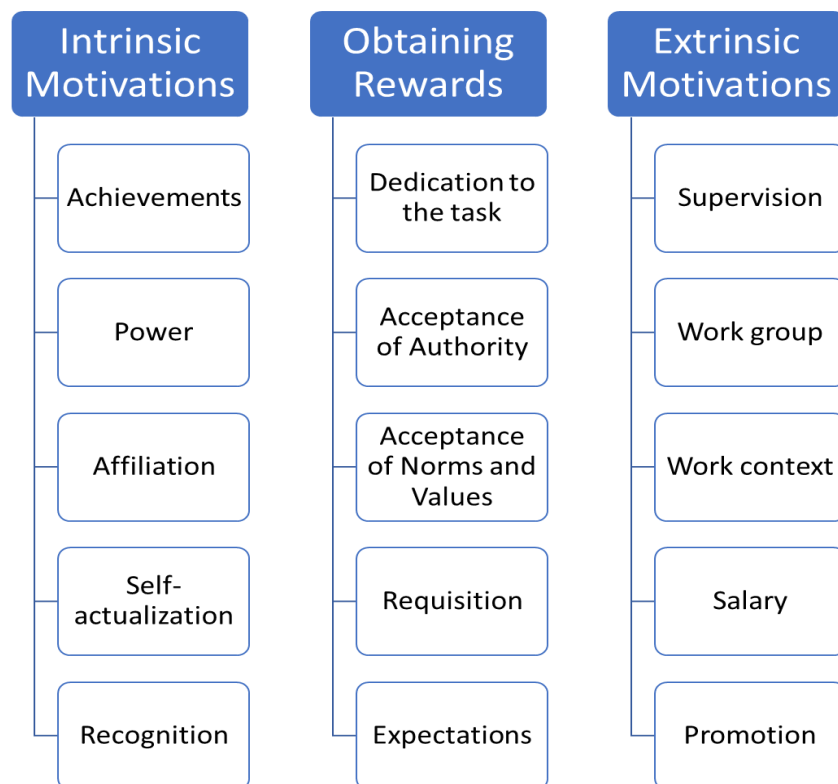


Figure 2. Breakdown of the conceptual categories measured by Toro's WMQ
 Figura 2. Desglose de las categorías conceptuales medidas por el WMQ de Toro
 Source: own work based on the model proposed by Toro Álvarez (1998a)

Intrinsic Motivations in the WMQ

Five variables represent this dimension: *Achievement*, *Power*, *Affiliation*, *Self-Actualization*, and *Recognition* (Toro, 1983). If they are analyzed together, they can be used to describe individuals' internal conditions in cognitive and affective terms, capturing their positive and negative feelings about their experiences with specific people or external situations. These five variables are described below:

- *Achievement* can be observed as externalized as behaviors focused on creating or performing something exceptional to achieve a certain degree of excellence in pursuit of goals or results. This variable is not manifest in individuals when the task has extreme levels of difficulty (very high or very low). However, it is easily observed at moderate levels of demand. The WMQ includes several items (statements) to operationalize behavior, e.g., *I devise more efficient ways to do the job, I outperform others in the quality of the results, and I am able to solve, more successfully than others, difficult job-related problems* (Toro, 1983; Oh & Roh, 2022).
- *Power* can be displayed in desires or actions that are executed to have control or influence over people, groups, or situations. It is usually reflected in obtaining positions of command or acting to obtain incentives and rewards. Among others, three items are used to operationalize this variable: *I have people in charge whom I can correct or stimulate based on their performance, I can persuade or convince others to carry out work-related activities, and I can direct other people's activities* (Toro, 1983; Borrego et al., 2023).
- *Affiliation* is expressed as behaviors oriented to maintaining or establishing satisfactory, effective relationships with other people. In this regard, feeling part of a group plays a central role. Items such as the following are included in the WMQ to operationalize this variable: *I have established good friendships with co-workers; I have co-workers' company and support; and I spend time with people who are connected, supportive, and defend each other* (Toro, 1983; Conchie, 2013).
- *Self-Actualization* can be observed as improvement of skills and knowledge generated by applying the personal skills and knowledge that have been acquired in the past. Two items were used in the WMQ to operationalize it: *I can do what I know how to do and I know that I am improving my job skills* (Toro, 1983; Waterman et al., 2023).
- *Recognition* is manifested as behaviors displayed to draw attention, acceptance, or admiration from other people or groups thanks to what an individual knows or is capable of doing. This variable is operationalized as two items: *Other people accept my merits and I know that my knowledge and abilities are recognized* (Toro, 1983; Delavallade, 2021).

Obtaining Rewards in the WMQ

Based on intrinsic and extrinsic motivations, individuals perceive desired rewards at work in different ways. In the WMQ, these perceptions are evaluated using five variables: *Dedication to the Task*, *Acceptance of Authority*, *Acceptance of Organizational Norms and Values*, *Requisition*, and

Expectations. This section of the questionnaire seeks to evaluate the instrumentality that the respondent attributes to several types of performance in relation to various desired outcomes or rewards (Toro, 1983):

- *Dedication to the Task* refers to behaviors associated with time, effort, and initiative towards work and the desire to demonstrate responsibility and quality in the activities performed. The two following items were employed to operationalize this variable: *I dedicate myself to my job for the time required and I do my work efficiently and responsibly* (Toro, 1983; Mlekus et al., 2022).
- *Acceptance of Authority* reflects compliance, acknowledgment, and acceptance of people with formal authority in the organization and their instructions. The two following items were used to operationalize this variable: *I comply with the decisions and guidelines provided by my manager regarding work and I willingly accept changes in job position or activity when a manager requests it* (Toro, 1983; Zhihang & Yueyue, 2022).
- *Acceptance of Norms and Values* is observed in behaviors that are indicative of beliefs, values, or norms that are relevant to the operation and permanence of the organization and contribute to achieving the company's mission and vision. This variable is represented in items such as: *I make my performance truly contribute to the objectives of the department and the company, I save on materials and work equipment, and I avoid risks due to loss and damage* (Toro, 1983; Prokhorova & Ovsyannikova, 2017).
- *Requisition* is manifested as behaviors that seek to obtain desired retributions, requesting them from the person in charge within the organization. Two items were employed for this variable: *I personally ask my manager to assign me a role that suits my capabilities or interests, and I can convince my manager, not only with words but also with my performance, merits, and capabilities* (Toro, 1983; Victor & Hoole, 2021).
- *Expectation* refers to an individual's confidence in the decisions made by a company or authority. Items such as the following were used to operationalize this variable: *I give the company time to notice my knowledge and capabilities, and I expect the company to raise my salary in accordance with the cost of living* (Toro, 1983; Xu et al., 2021).

Extrinsic Motivations in the WMQ

The factors detailed in this subsection reflect an individual's interest in work, behaviors that are displayed within the work environment, and the value attributed to the types of retribution found at an organization. The variables classified as extrinsic motivators in the WMQ are *Supervision, Work Group, Job Content, Salary, and Advancement Opportunities* (Toro, 1983).

- *Supervision* is the value that an individual attaches to the feedback given or recognition actions taken by his or her manager (immediate authority) within the organization. Two items in the WMQ refer to this variable: *My manager evaluates my performance in a considerate, understanding, and fair manner, and My manager acknowledges my merits* (Toro, 1983; Patterson et al., 2020).

- *Work Group* refers to social conditions at work that allow individuals to participate in collective actions, share, collaborate, and be in contact with others. These conditions were operationalized as two items: *I can have a relationship with people who contribute and enrich me*, and *I am in a work group that can organize and carry out interesting and useful activities* (Toro, 1983; Ge et al., 2022).
- *Job Content* concerns the autonomy and information that individuals are provided regarding their functions and how they contribute to the organization. Items such as the following three were employed to operationalize this variable: *I carry out varied and interesting tasks, thus avoiding monotony*, *I can see the results or benefits derived from the work I do*, and *I am free to decide on the most convenient way to do the job* (Toro, 1983; Feyer, 2023).
- *Salary* is the economic retribution that individuals receive according to their position. This variable was expressed in the three following statements: *I earn a salary that allows me to adequately satisfy all my individual and family needs*, *I earn a salary that truly rewards effort*, and *I know that I can periodically receive salary increases* (Toro, 1983; Osterloh, & Frey, 2002).
- *Advancement Opportunities* are about the possibility of being promoted at an organization. Items such as the following three were employed to operationalize this variable: *I could get a promotion that would make me feel that I have made progress and improved in the job*, *I could get a promotion to have a more interesting and important job*, and *I could get a promotion to have a job with greater responsibility* (Toro, 1983; Matiba, 2023).

This study aims to analyze the most relevant work motivation variables for individuals classified as Millennials. Then, based on their preferences, it will be possible to establish their motivational profiles. Companies can use these profiles to determine the most appropriate incentives for them in their human talent management policies.

3. METHODOLOGY

This study employed a non-experimental cross-sectional design, and the data were collected at a single point in time (Hernández et al., 1991). It adopted a descriptive and correlational approach by means of surveys (Montero & León, 2002), which included questions with ordinal, nominal, and even ipsative scales (Calderón Carvajal & Ximénez Gómez, 2014). Descriptive statistics and logistic regressions were used to determine the most significant characteristics of the motivational profiles of Millennials, which were generated using clustering.

Data Collection Instrument

This study implemented the WMQ because it was designed in Latin America and has been validated in several countries in this region. An adapted WMQ was submitted for evaluation and approved by three expert judges in organizational psychology, industrial engineering, and statistics. After the review, the instrument was adjusted, changing the wording in five of its questions. The final form had

33 questions. There were 15 questions about motivation, grouped into three dimensions: *Intrinsic Motivations*, *Obtaining Rewards*, and *Extrinsic Motivations* (Toro, 1992). Each variable was measured using five statements, and there were 18 variables for sociodemographic and employment characterization.

Before the instrument was administered, it was also validated in a pilot test with 30 students from the Universidad Panamericana in Mexico to determine if each one of the questions was adequately understood. Based on this pilot test, it was determined that the questions were well formulated, and the average response time was 40 minutes.

Clustering Procedure

The clustering procedure was applied as a two-step method. First, individuals were grouped into clusters, highlighting the distinctive variables that differentiated them. This step followed the approach presented by Rubiano-Moreno et al. (2019) for ipsative variables. Second, after the clusters had been determined, logistic regression was applied to determine the driving factors that explained the phenotypic differences among groups. The following paragraphs detail these two steps.

The first step employed a method that incorporates the concept of dissimilarity (Sørensen, 1948). First, the optimal number of clusters (k) was determined via the average silhouette method. Afterward, a dissimilarity matrix was obtained in which every element d_{ij} represented the dissimilarity value between individuals i and j . Subsequently, the centroids of the clusters were assigned as the k individuals with the highest dissimilarity value among them. After that, the remaining $n-k$ individuals were grouped into the cluster that offered the centroid with the lowest dissimilarity value. The procedure stopped when there were no individuals left to assign.

In the second step, after the clusters had been identified, the score obtained in the centroid for each characteristic was used to characterize the profiles considering their sociodemographic variables and, if possible, describe the preferences of each group (Rubiano-Moreno et al., 2019). This way, it was possible to define the profile of each cluster.

Logistic regression analysis was conducted to identify the driving factors in each cluster. Depending on the number of clusters created, logistic regression can be either binary or multinomial. In this regression, the dependent variable (output) was denoted by the cluster to which each individual was assigned (the k -th cluster is selected as the reference value). Meanwhile, the sociodemographic variables and questionnaire answers were treated as predictors.

- Logistic regression model:

$$Y_j = \begin{cases} 0 & \text{If individual } i \in \text{Group 1} \\ 1 & \text{If individual } i \in \text{Group 2} \end{cases} \quad (1)$$

- Model to be fitted:

$$\ln\left(\frac{\pi_j}{1 - \pi_j}\right) = \beta_0 + \beta_1 x_j \quad (2)$$

where $\pi_j = P(Y_j = 1)$, and x_j represents each socio-economic variable. The model in Equation (2) was introduced to identify the socioeconomic variables whose association with the constructed groups was statistically significant. A measure of goodness of fit called Akaike Information Criterion (AIC)¹ is commonly used to compare the fit between models (the lower the value, the better the fit), but it was not implemented in this case and is only presented here for the sake of completeness.

Descriptive Statistics

The sampling was non-probabilistic with two criteria: (1) being part of the Millennial generation and (2) having work experience. The selection criteria did not include aspects related to socioeconomic or education level to broaden the coverage of the study.

The form was uploaded to the Question Pro® platform, which provided a link to fill out the questionnaire. It was administered in Guadalajara, Jalisco, Mexico. Subsequently, the quality of the collected data was evaluated, and a total sample of 197 responses was obtained. Finally, the data were tabulated in Microsoft Excel® for subsequent analysis using an algorithm programmed in C language.

4. RESULTS

The results presented in this section are divided into two main subsections. The first one presents the main descriptive statistics of each variable, and the second one describes the construction of Millennials' motivational profiles.

Table 1 details the most important sociodemographic characteristics of the participants in this study: age, gender, marital status, number of children, socioeconomic status, household composition, main breadwinner, education level, and monthly income.

Regarding the sociodemographic description of these Millennials (Table 1), most of them were between 21 and 25 years old (65.99%), followed by those between 26 and 30 (22.84%), and those who were exactly 20 or older than 31 (11.17%). Regarding gender, 53.81% men and 46.2% women responded to the survey. In relation to marital status, most were single (87.31%), and, consequently, 93.40% had no children.

It was found that most participants (68.02%) were of middle socioeconomic status; 3.55%, low status; and 28.43%, high status. Regarding household composition, 67.01% lived with their family; 12.18%, with their partner and/or children; and 20.81%, alone or with friends. Accordingly, for most of them, their parents, relatives, or partner provided their main economic support (63.96%), while the rest

¹ AIC = -2Nlog-likelihood + 2pN

(36.04%) made an economic contribution to the household. In terms of education level, most (72.59%) had a bachelor's degree; 26.86%, a graduate degree; and only 3.55%, a high school diploma. With respect to income level, most (43.15%) earned a salary between MXN 5,000 and 10,000, followed by those in the range between MXN 10,001 and 20,000 (23.86%), those between MXN 20,001 and 30,000 (17.77%), and, finally, those who earned more than MXN 30,000 (15.25%, i.e., the lowest percentage).

Table 1. Frequency distribution of Millennials' sociodemographic variables
 Tabla 1. Distribución de frecuencias de las variables sociodemográficas de los Millennials

Variable	Modalities	Frequency	Percentage
Age	20	4	2.03
	21	25	12.69
	22	24	12.18
	23	24	12.18
	24	32	16.24
	25	25	12.69
	26	12	6.09
	27	12	6.09
	28	8	4.06
	29	6	3.05
	30	7	3.55
	31	2	1.02
	32	5	2.54
Gender	Female	91	46.19
	Male	106	53.81
Marital status	Single	172	87.31
	Married / De facto relationship	25	12.69
Number of children	None	184	93.40
	One	8	4.06
	Two	4	2.03
	Three	1	0.51
Socioeconomic status	A	56	28.43
	B	80	40.61
	C	54	27.41
	D	6	3.05
	E	1	0.51
Living arrangement	Lives alone	23	11.68
	Lives with one parent	20	10.15
	Lives with friends and family	18	9.14
	Lives with parents and siblings	112	56.85
	Lives with partner and/or children	24	12.18
	Respondent	53	26.90
	Respondent's partner	9	4.57

Main breadwinner in the household	Both (my partner and I)	18	9.14
	Father or mother	115	58.38
	Other	2	1.02
Education level	High school	7	3.55
	Bachelor's degree	143	72.59
	Graduate diploma	23	11.68
	Master's degree	23	11.68
	Ph.D.	1	0.51
Monthly income	Between MXN 5,000 and 10,000	85	43.15
	Between MXN 10,001 and 20,000	47	23.86
	Between MXN 20,001 and 30,000	35	17.77
	More than MXN 30,000	30	15.23

Source: own work

The information presented so far in this section describes the dataset collected in this study. The following subsection reports the results obtained using the two methods proposed in the Methodology section.

Motivational Profiles of Millennials

The first step to analyze the data was to calculate the optimal number of clusters that should be used according to the methodology. Figure 3 shows that the optimal number of clusters was two because it maximized the value of the average silhouette, a metric commonly used for clustering methods (Pollard & Van Der Laan, 2002). Subsequently, clustering was performed as shown in Figure 4 and taking into account the 15 that explain the factors that influence workers' motivation, i.e., *Achievement*, *Power*, *Affiliation*, *Self-Actualization*, *Recognition*, etc. (Toro Álvarez, 1998a).

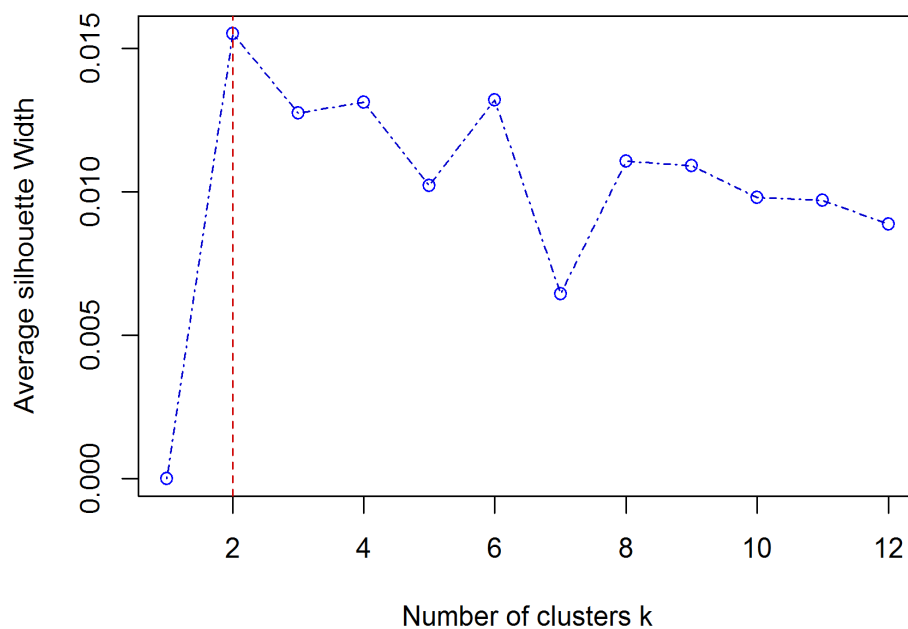


Figure 3. Optimal number of clusters for Millennials
 Figura 3. Número óptimo de clústeres para los Millennials
 Source: own work

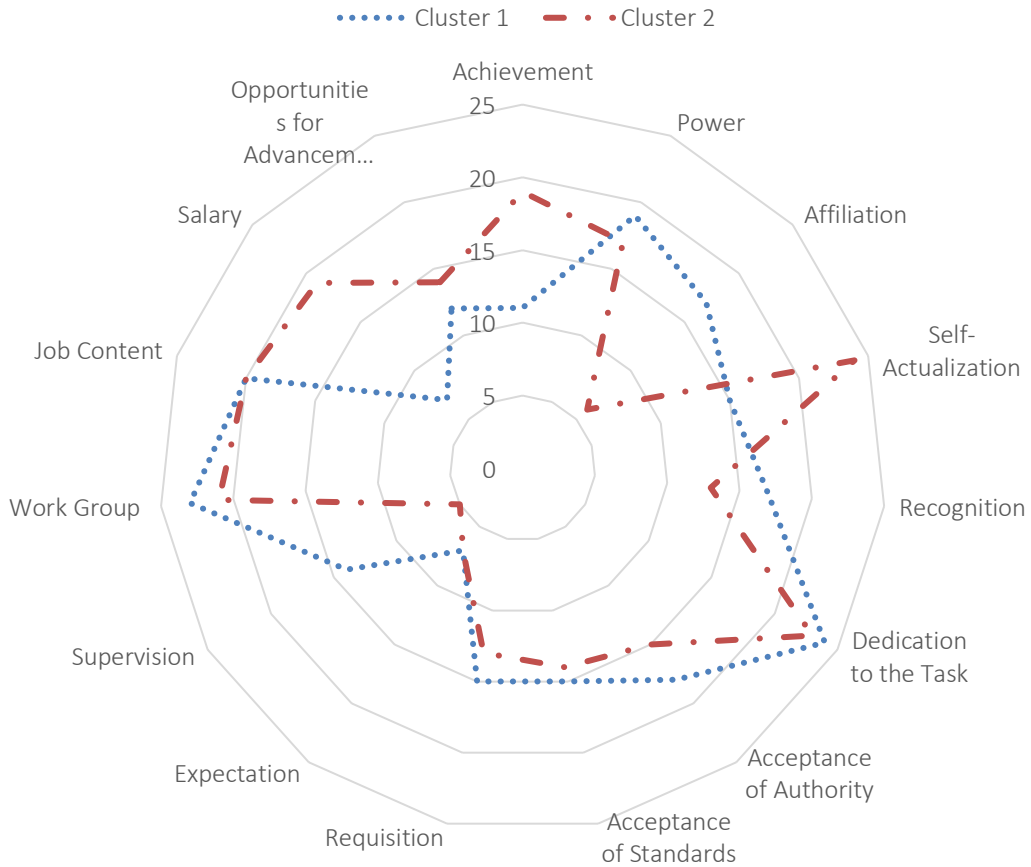


Figure 4. Characteristics of each cluster found by the proposed method
 Figura 4. Características de cada clúster encontrado por el método propuesto
 Source: own work

After the clusters had been generated, it was found that the 75 statements consolidated in the 15 variables could be calculated in different ways. Taking into account the grouping generated by the proposed method, Table 2 describes the two motivational profiles identified among this population of Millennials. They are called Clusters 1 and 2.

To describe the Millennial generation and their motivational profiles, descriptive statistics were first calculated for each profile (Clusters 1 and 2). Then, logistic regression analysis was conducted to determine if any of the sociodemographic variables could explain the grouping or cluster. As a result of this analysis, it was found that only *Age* and *Main Breadwinner in the Household* had a direct association with the type of profile. Based on this information and the variables with the highest scores, we labeled each profile considering its most representative characteristics.

Table 2. Frequency distributions of the sociodemographic variables of Millennials classified by cluster
 Tabla 2. Distribución de frecuencias de las variables sociodemográficas de los Millennials por cluster

Variable	Modalities	Cluster 1		Cluster 2	
		Frequency	Percentage	Frequency	Percentage
Age	20	1	1.56	3	4.69
	21	11	17.19	14	21.88
	22	12	18.75	12	18.75
	23	11	17.19	13	20.31
	24	8	12.50	24	37.50
	25	5	7.81	20	31.25
	26	1	1.56	11	17.19
	27	6	9.38	6	9.38
	28	2	3.13	6	9.38
	29	1	1.56	5	7.81
	30	3	4.69	4	6.25
	31	1	1.56	1	1.56
	32	1	1.56	4	6.25
	33	0	0.00	4	6.25
Gender	Female	27	42.19	64	48.12
	Male	37	57.81	69	51.88
Marital status	Single	58	90.63	114	85.71
	Married / De facto relationship	6	9.38	19	14.29
Number of children	No children	63	98.44	121	90.98
	One	1	1.56	7	5.26
	Two	0	0.00	4	3.01
	Three	0	0.00	1	0.75
Socioeconomic status	A	20	31.25	36	27.07
	B	29	45.31	51	38.35
	C	14	21.88	40	30.08
	D	1	1.56	5	3.76
	E	0	0.00	1	0.75
Living arrangement	Lives alone	8	12.50	15	11.28
	Lives with one parent	3	4.69	17	12.78
	Lives with friends or siblings	4	6.25	14	10.53
	Lives with parents and siblings	42	65.63	70	52.63
	Lives with partner and/or children	7	10.94	17	12.78
	Respondent	10	15.63	43	32.33
	Respondent's partner	3	4.69	6	4.51

Main breadwinner in the household	Both (my partner and I)	5	7.81	13	9.77
	Father or mother	46	71.88	69	51.88
	Other	0	0.00	2	1.50
Level of education	High school	2	3.13	5	3.76
	Bachelor's degree	53	82.81	90	67.67
	Graduate diploma	2	3.13	21	15.79
	Master's Degree	7	10.94	16	12.03
	Ph.D.	0	0.00	1	0.75
Monthly income	Between MXN 5,000 and 10,000	22	34.38	63	47.37
	Between MXN 10,001 and 20,000	18	28.13	29	21.80
	Between MXN 20,001 and 30,000	9	14.06	26	19.55
	More than MXN 30,000	15	23.44	15	11.28

Source: own work

To determine if there are driving factors that can be used to differentiate between the two clusters, logistic regression was conducted employing sociodemographic variables. Tables 3 and 4 report the results of the statistically significant variables.

Table 3. Logistic regression of Age

Tabla 3. Regresión logística de la edad

Coefficients	Estimate	Std. Error	Z value	Pr (> z)
(Intercept)	-1.9431	1.2077	-1.609	0.1076
Age	0.1083	0.0490	2.210	0.0271 *

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

Dependent Variable:

Cluster 1: 0

Cluster 2: 1 (event)

AIC: 247.06

Odds Ratio: 0.1082924

Source: own work

Table 4. Logistic regression of Main Breadwinner in the Household

Tabla 4. Regresión logística del sustentador principal del hogar

Coefficients	Estimate	Std. Error	Z value	Pr (> z)
(Intercept)	1.7025	0.4368	3.898 -	9.72e-05 ***
Main Breadwinner	-0.3109	0.1264	2.459	0.0139 *

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

Dependent Variable:

Cluster 1: 0

Cluster 2: 1 (event)
AIC: 245.87
Odds Ratio: -0.3109496

Source: own work

Motivational Profile 1 (Cluster 1): "Cooperative Millennials"

The sociodemographic variables classified by cluster in Table 2 show that Cluster 1 concentrates the youngest population. Consequently, they have the lowest number of children, and their main economic support comes from their parents. In the rest of the variables, both clusters exhibited similar characteristics.

According to the information in Tables 3 and 4, *Age* and *Main Breadwinner in the Household* are driving factors that can be used to differentiate between the two clusters. In the case of *Age*, the older the individual, the higher his or her probability of belonging to Cluster 2. On the contrary, high values in *Main Breadwinner* indicate a lower probability of belonging to Cluster 2 (i.e., a high probability of belonging to Cluster 1).

The radar chart in Figure 4 indicates that the *Intrinsic Motivations* of Millennials in Cluster 1 are not so much *Achievement*, *Self-Actualization*, or *Recognition*. Instead, they focus on influencing groups or having control over situations through *Power*, and they like to maintain relationships with people around them to achieve *Affiliation* with the group. In terms of *Obtaining Rewards*, they are characterized by dedicating time and effort to the tasks assigned to them, and they care if their performance contributes to the fulfillment of the objectives of their group, always accepting authority. Finally, in relation to *Extrinsic Motivations*, they focus on participating in collective work where varied tasks can be performed and there is freedom in the way in which activities are carried out within the organization. These characteristics clearly define the "cooperative" profile of Cluster 1. The following paragraph describes the motivational profile of Millennials in Cluster 2.

Motivational Profile 2 (Cluster 2): "Competitive Millennials"

Contrary to the previous group, Cluster 2 includes the oldest Millennials, which implies that they have the largest number of children and are the main economic support of their families (see Tables 2, 3, and 4). With respect to their *Intrinsic Motivations*, they continuously seek to improve their skills and abilities within the organization to improve their performance. They also like to lead their work teams to meet goals. Regarding *Obtaining Rewards*, they have a hard time accepting authority, but they focus on performing their tasks enthusiastically because they expect the organization to notice their effort and reward it. Finally, in relation to *Extrinsic Motivations*, their main difference with respect to Cluster 1 is that they are more interested in the economic retribution they get for doing their job. These characteristics make these Millennials more "competitive" than their counterparts in Cluster 1.

5. DISCUSSION

Organizational motivation is the key to develop effective strategies that influence employees' emotional state through incentives and thus modify their behavior (Koenes, 1996). According to

Baard et al. (2004), if employees feel motivated by a reward, they can modify their behavior. For this reason, this study focused on identifying what motivates the Millennial generation and how these people can be grouped based on their preferences. Organizations can establish motivational profiles to examine the psychological characteristics of a group of workers and, based on that, implement incentive policies according to the preferences of each profile (Leonard et al., 1999).

The two motivational profiles found in this Millennial population share some characteristics. During the clustering procedure, the two profiles showed similar values in several variables, such as *Dedication to the Task*, *Job Content*, and *Work Group*. However, their differences can be observed in other variables: *Salary*, *Self-Actualization*, and *Affiliation*. These results reaffirm what Pontón Deluquez and Márquez López (2016) claimed: this generation is not motivated by supervision. It was also confirmed that Millennials, a multitasking generation, are motivated by *Job Content* and *Dedication to the Task*, as proposed by Kim (2018).

Concerning incentives, this generation prefers flexibility in work schedules and greater independence, as proposed by Stein and Martin (2015) and Nielsen (2015). This confirms that organizations should offer Millennials a combination of monetary and non-monetary incentives so that they feel motivated.

This study adopted the Self-Determination Theory (SDT) (Deci & Ryan, 1985) and the classic definitions of intrinsic and extrinsic motivation (Ryan & Deci, 2000), which can be used to determine if tasks are self-determined—a key aspect to compare the two clusters described in the results. For Kanfer et al. (2017), intrinsic motivation involves interesting and enjoyable activities, which can be observed in both clusters. In turn, external rewards such as money are more appreciated in Cluster 2. Investigating how job perspectives have changed, as well as how to approach motivation at work (Kanfer et al., 2017), could help to understand the intrinsic and extrinsic motivations of the two clusters reported in this study.

In summary, the proposed methodology can not only cluster individuals based on their work motivations (incentives) but can also quantify the magnitude of these motivations. For instance, one cluster may exhibit a strong preference for monetary incentives, while another might prioritize professional development opportunities. Armed with this information, HR departments can design personalized incentive packages and career development plans that resonate with specific employee groups and, as a result, optimize overall productivity.

6. CONCLUSIONS

This article analyzed the sociodemographic characteristics of Millennials, as well as their motivational preferences. To perform this analysis, a procedure based on clustering and logistic regression was implemented. Considering the results of the clustering algorithm and a statistical analysis, two motivational profiles of Millennials were identified.

Despite variations between the two profiles in certain aspects like age and main breadwinner, most of their characteristics were found to be similar. To define more distinguishable profiles, other variables should be considered as well. Nevertheless, this study employed the motivational variables

proposed by Toro Álvarez (1998a), which revealed the most important differences between the two profiles.

"Cooperative Millennials" showed a strong inclination toward teamwork, seeking affiliation with the group, and pursuing objectives that benefit the team as a whole. On the other hand, "competitive Millennials" displayed a more self-focused nature, with a preference for leadership roles and a primary focus on personal economic gain—in contrast to their counterparts.

Future studies can use these profiles to more deeply explore other essential aspects of this generation's life, including their personal, emotional, social, and work-related facets—the main topic in this paper. This knowledge will enable companies to better understand and manage this generation, as they are expected to be a significant portion of the future workforce. Implementing incentives that enhance their sense of belonging, efficiency, and overall potential can be pivotal in driving their productivity and success.

CONFLICTS OF INTEREST

The authors declare no conflict of financial, professional, or personal interests that may inappropriately influence the results that were obtained or the interpretations that are proposed here.

AUTHOR CONTRIBUTIONS

In this study, all the authors made a significant contribution, as follows:

Jessica Rubiano Moreno: literature review, construction and interpretation of the statistical model, data analysis, results, discussion, and writing – original draft.

Carlos Alonso Malaver: cluster construction, analysis of statistical model and results.

Samuel Nucamendi Guillen: supervision, conceptualization, and writing – review and editing.

Carlos López Hernández: introduction, conceptualization's millennials generation and data collection.

Camilo Ramírez Rojas: literature review and conceptualization of theoretical framework.

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