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*Artículos científicos*

## **Actitud profesional del diseñador industrial frente al desarrollo sostenible**

***Professional Attitude of the Industrial Designer Towards Sustainable Development***

***Atitude profissional do designer industrial em relação ao desenvolvimento sustentável***

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### **Resumen**

Esta investigación tuvo como objetivo analizar la actitud del diseñador industrial mediante su acto profesional frente a los objetivos de la Agenda 2030 para el Desarrollo Sostenible. El supuesto que guió la investigación considera que los rasgos que definen la actitud del diseñador industrial profesional son congruentes con los preceptos del desarrollo sostenible. La investigación se llevó a cabo bajo el riguroso acompañamiento de la teoría de la acción social de Talcott Parsons. En primera instancia, se dirigió desde un plano analítico y posteriormente se redireccionó hacia un plano empírico. Mediante un cuestionario de 206 preguntas y un escalamiento tipo Likert, se midió el acto profesional del diseñador industrial. Se encontró, entre otros hallazgos, que el profesionista de diseño industrial es altamente analítico y racional, que no sobrepone el estatus que le supone su profesión a su acción profesional y que emplea una actitud emotivo-racional que le permite enfrentar las diferentes circunstancias del contexto actual y direccionarse hacia el desarrollo sostenible.

**Palabras clave:** acción profesional, desarrollo sostenible, diseño industrial, teoría de la acción social.

## Abstract

The objective of this research was to analyze the attitude of the industrial designer through his professional act towards the objectives of the 2030 Agenda for Sustainable Development. The assumption that guided this research considers that the features that define the attitude of the professional industrial designer are consistent with the precepts of sustainable development. The research was carried out under the rigorous accompaniment of Talcott Parsons's theory of social action. In the first instance, it was directed from an analytical plane and later it was redirected towards an empirical plane. Through a questionnaire of 206 questions and a Likert-type scaling, the professional act of the industrial designer was measured. It was found, among other findings, that the industrial design professional is highly analytical and rational, that they do not superimpose the status that their profession implies on their professional action and that they use an emotional-rational attitude that allows them to face the different circumstances of the context and move towards sustainable development.

**Keywords:** professional action, sustainable development, industrial designer, social action theory.

## Resumo

O objetivo desta pesquisa foi analisar a atitude do designer industrial por meio de sua atuação profissional em relação aos objetivos da Agenda 2030 para o Desenvolvimento Sustentável. O pressuposto que norteou a pesquisa considera que as características que definem a atitude do profissional designer industrial estão em consonância com os preceitos do desenvolvimento sustentável. A pesquisa foi realizada sob o rigoroso acompanhamento da teoria da ação social de Talcott Parsons. Em um primeiro momento, foi direcionado a partir de um plano analítico e posteriormente foi redirecionado para um plano empírico. Por meio de um questionário de 206 questões e uma escala do tipo Likert, mediu-se o ato profissional do designer industrial. Constatou-se, entre outras constatações, que o profissional de desenho industrial é altamente analítico e racional, que não sobrepõe o status que sua profissão implica à sua atuação profissional e que utiliza uma atitude emocional-racional que lhe permite enfrentar os diferentes circunstâncias do contexto e avançar para o desenvolvimento sustentável.

**Palavras-chave:** ação profissional, desenvolvimento sustentável, desenho industrial, teoria da ação social.

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## Introduction

The Hungarian artist László Moholy-Nagy (1947), in his book *Vision in Motion*, defined design as an attitude rather than a profession because it is the result of complex and intricate individual work socially contextualized. He literally said the following:

The idea of design and of the designer's profession has to be transformed from the notion of a specialist function to that of an attitude of ingenuity and inventiveness that allows projects to be seen not in their particularity, but in their relationship with the individual and with the community (p. 42).

This means that design implies an attitude towards life. As social reality changes, the designer's ingenuity and inventiveness respond accordingly. The artist's words gain relevance and meaning because, faced with the need to implement sustainable development, the designer has to assume a positive, proactive and decisive attitude to help save the planet.

The 21st century presents itself with various challenges: the lack of employment that conditions and puts human sustenance at risk and diminishes the expectations of individual fulfillment of the new generations; social inequalities such as poverty, inequity and inequality; the use of digital technologies that disrupt the workplace; the economic stagnation product of various circumstances of the capitalist system; the sanitary conditions derived from the 2019 coronavirus disease (covid-19) pandemic, a systemic infection caused by the type 2 coronavirus that causes severe acute respiratory syndrome (SARS-CoV-2); geopolitical problems that lead to extreme situations such as terrorist attacks or the erosion of social cohesion; the environmental damage caused by human action caused by the industrial revolutions and that today accumulate catastrophic consequences for nature and the life of the species that inhabit the planet. In short, as stated by the World Economic Forum [WEF] (2021), various economic, environmental, geopolitical, social and technological risks seem increasingly pressing.

The United Nations (UN) (Digital Writing, January 23, 2022) indicates that there are five major emergencies that need to be addressed. In health, covid-19; in economics, the reform of the global financial system; in the environment, the global climate crisis; in

technology, the digital divide that is becoming more and more accentuated, and in the social sphere, achieving sustainable peace, free from violent attacks.

The industrial designer who provides object and technological solutions is inserted in this world, in this network of problems, and must establish himself as a fundamental piece for their resolution. The industrial designer has to assume an attitude in favor of sustainability. His creative potential is a fundamental axis for the creation of objects, systems and processes that contribute to sustainability. He must be a participant in the circular economy of the three Rs: reuse, recycle and reduce. Participate in a culture of sustainability.

The skills of professionals prospected for the year 2025, according to the WEF (2020), are shown in table 1:

**Tabla 1.** Principales habilidades laborales que los profesionistas deben poseer para el año 2025

Habilidad laboral	Tipo de habilidad
Pensamiento analítico e innovación	Resolución de problemas
Aprendizaje activo y estrategias de aprendizaje	Autogestión
Resolución de problemas complejos	Resolución de problemas
Pensamiento crítico y análisis	Resolución de problemas
Creatividad, originalidad e iniciativa	Resolución de problemas
Liderazgo e influencia social	Trabajo con personas
Uso de tecnología: monitoreo y control	Tecnología, uso y desarrollo
Diseño de tecnología y programación	Tecnología, uso y desarrollo
Resiliencia, tolerancia al estrés y flexibilidad	Autogestión
Razonamiento, resolución de problemas e ideación	Resolución de problemas

Fuente: Elaboración propia con base en WEF (2020)

Taking into account the above, the question that arises is the following: what are the attitudinal traits of the industrial designer in the context of sustainable development in the face of these skills? In this regard, the historian Alice Rawsthorn (2021) goes on:

Design, with all its many guises, has always fulfilled an elemental role as an agent of change that interprets variations of all kinds - social, economic, scientific, technological, cultural, ecological or whatever - to ensure that they affect us in a meaningful way. more positive than negative (p. 13).

This article presents the results of an investigation whose purpose was to investigate the attitude of professional industrial designers in the context of sustainable development, taking as reference the theory of social action in its four dimensions: cultural, social, behavioral and of personality. The foundation of this work was the systemic structural theory proposed by the sociologist Talcott Parsons (1951, 1968, 1974). And he took as a conceptual framework four fundamental elements of the theory of action: role, act, actor and status. The assumption raised was that the traits that define the attitude of the professional industrial designer are consistent with the precepts of sustainable development, considering that rationality and the positive management of their emotions lead them to assume a favorable role in this scenario and to privilege this over their own. expectations of position and social status.

Understanding the professional action of the designer implies knowing the position that the actor has in his professional role and placing it on a measurable scale. In this sense, the theory of attitudes contributes to observe the action through the attitude of the individual, that is, the jump from the theoretical to the empirical to represent its objective value. Therefore, the guiding question of the research was: what is the attitude of industrial design professionals in the context of sustainable development?

## **Method**

### **Participants**

For this study, a population of 324 qualified industrial designers was considered, all of them graduated from the degree in Industrial Design of the Faculty of Architecture and Design (FAD) of the Autonomous University of the State of Mexico (UAEM). This amount resulted from the documentary review of the files of the records of the Department of Degrees of the academic body, which represented a first filter, because the number of graduates of the degree was greater; however, only the 324 had passed their professional exam and, therefore, had professional status. To define the sample size, a sampling formula for finite type populations was applied considering a security level (Z) of 95%, a precision (d) of 9.2% and an expected proportion (p) of 5%. Thus, the number of 20 professionals was obtained. The formula followed is described below:

- $N = 324$ .
- $Z = 1.96$ .
- $p = 5 \% = 0.05$ .
- $q = 1 - 0.05 = 0.95$ .
- $d = 9.2 \% = 0.092$ .

$$n = \frac{(324)(1.96)^2(0.05)(0.095)}{(0.09)^2(324 - 1) + (1.96)^2(0.05)(0.095)}$$

$$n = 20.27$$

The selection of the participants was random considering the following factors: 1) that they were in professional practice. In this case, the areas were considered: productive-business, teaching-academy or self-employment-entrepreneurship. 2) Both genders (men and women) were considered indistinctly. 3) That they be in any geographical area of the country or abroad. 4) That they were reachable by any means: by telephone, via social networks, via email, as well as in person. 5) That they had graduated from the FAD, regardless of the generation (it should be noted that since 1984 this career has been taught in said faculty).

## Design

The research was designed based on the analytical realism proposed by Parsons and as a reference framework, the systemic structural approach of the theory of social action that he proposed in 1937 was used. This classic Western paradigm provides epistemological elements that allow the analysis of professions as social objects from their simplest relationships and components. In this sense, on the definition of a scientific object of theoretical interest, Parsons (1968) states:

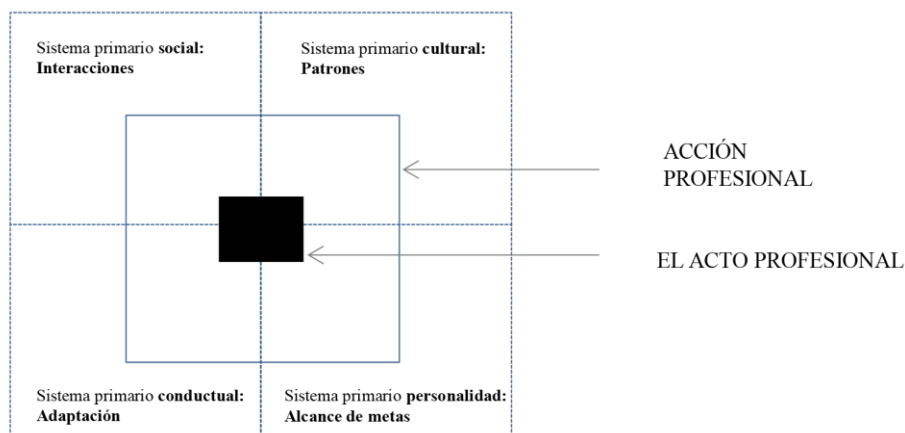
It has been described in terms of one or more frames of reference [...]. Theoretical explanation requires that it be broken down into simpler elements that serve as units of one or more theoretical systems according to which it will be explained. (p. 67).

Therefore, considering that it seeks to answer the question that questions how is the professional act of the industrial designer in relation to their attitudes within the context of sustainable development, and considering that the professional act is the simplest element and ultimate goal of the action professional, it was necessary to identify the place it occupies in the system and what its relationships are within the structure and process of social action.



Theoretically, professional action is located within the human action system where it is configured by taking procedural and structural elements from other systems: cultural, behavioral, social and personality. In these action subsystems are located the cultural patterns that define the system, behavioral expressions, social relationships and intentions, volitional acts of goal achievement. This is explained in figure 1.

**Figura 1.** Ubicación del acto profesional en el sistema humano de acción



Nota: dentro del sistema humano de acción profesional el fin último será el acto profesional; para Parsons es el acto unidad más pequeño.

Fuente: Reyes y Pedroza (2015, p. 88)

According to the figurative explanation of Parsonian theoretical postulates, the professional act is the ultimate goal —although not the only one in conceptual terms— and it is at the same time the “unity act”. In this sense, it is considered the smallest element to analyze. Based on the above, this schematization allowed us to conceptually locate the place it occupies within the action system. Once the professional act was located within the social system, and in theoretical-methodological agreement, it was necessary to operationalize the concept for its analysis.

Considering the theoretical-methodological elements of analytical realism as a basis, the planning was reached, in the first instance, of the concept of professionalism —in this research also understood as professional action—. In this way, professional action was conceived as the category from which the concept, the variables and their dimensions would derive. This is shown in table 2.

**Tabla 2.** La actitud en el acto profesional

Categoría	Concepto (acto unidad del sistema)	Variable (los problemas funcionales)	Dimensión	
			Plano cognitivo	Plano afectivo
Acción profesional	Acto	Adaptación	Universalismo	Especificidad
	Actor	Alcance de metas	Desempeño	Afectividad
	Rol	Integración	Particularismo	Difusividad
	Estatus	Latencia	Cualidad	Neutralidad

Fuente: Elaboración propia con base en Reyes y Pedroza (2015)

Opposed to empirical studies, in a deductive way, the conceptual framework of reference was defined from its components and their relationships, that is, from the structure and the process. Let us remember that the system to which the professional action belongs is the social action system, and this in turn is related to the cultural, social, behavioral and personality subsystems of the individual, so that the derived variables were: Latency or cultural patterns, Integration, Achievement of goals and Adaptation. The foregoing can be seen in tables 2 and 3. In this sense, and taking into account the unity concepts or acts of the professional action system shown in figure 1, four fundamental concepts were considered: act, actor, role and status. These elements, according to the Parsonian theoretical foundation, are procedural elements of professional action. This paper shows the results derived from analyzing these elements.

**Tabla 3.** Definición de variables

Subsistema	Variable
Personalidad	Adaptación
Conductual	Alcance de metas
Social	Integración
Cultural	Latencia o patrones culturales

Fuente: Elaboración propia con base en Parsons (1968)



To analyze the reality experienced by the industrial designer before the 2030 Agenda in relation to their professionalism, professional service was considered as an immediate goal, for which the concept of attitude was taken into account. The question: What is the attitude of the Industrial Designer towards his professional act within the framework of the 2030 Agenda for sustainable development? it allowed to operationalize the concept of act in such a way that it allowed to have the indicators to measure.

According to Likert (1932), the term attitude refers to the disposition to action based on knowledge and latent affectivity in the subject. For Fishbein et al. (cited in Méndez and Peña, 2009), attitude is a "learned predisposition to consistently respond favorably or unfavorably to an object and its symbols" (p. 13). Allport (1935) recognizes attitude as a disposition to act, built by the integration of various specific responses of a neural type or mental state with a disposition to respond according to experience regarding the situations or objects with which it is related.

Two elements stand out among these definitions: the affective and the cognitive, that is, the catetic plane and the plane of reason. From this, the dimensions shown in table 4 were defined.

**Tabla 4.** Definición de las dimensiones

Dimensiones	
Plano cognitivo (razón)	Plano afectivo (catético)
Universalismo	Especificidad
Desempeño	Afectividad
Particularismo	Difusividad
Cualidad	Neutralidad

Fuente: Elaboración propia con base en Cortada (2004)

Table 2 shows the operationalization of the category of study and the position in the conceptual framework of reference of the unit: the act and its variables; the actor and the variables of it. Likewise, it shows the relationship that this conceptual framework has with the cognitive and affective dimensions, which, based on the instrument, allowed evaluating the disposition to action (see tables 5, 6, 7 and 8).

Defining the relationship between the attitude and the professional action system made it possible to observe the patterns. This is shown in the conclusions of this study.

**Tabla 5.** Operacionalización de la categoría de acto; operacionalización de variables, dimensiones e indicadores

Variable	Dimensión	Definición de las dimensiones	Definición operativa	Indicador
Adaptación	Plano cognitivo	Universalismo	La adaptabilidad del diseñador en el acto profesional de acuerdo con ideas o creencias en relación con su profesión.	Concibe Conceptualiza Crea
	Plano catético	Especificidad	La adaptabilidad del diseñador en el acto profesional de acuerdo con el aprecio, la gratificación y el reconocimiento a su trabajo.	Obtiene remuneración Reconocimiento Promoción
Alcance de metas	Plano cognitivo	Desempeño Adquisición	El alcance de metas en torno al valor que da el diseñador al acto profesional y su desempeño en él.	Éxito Capacitación continua
	Plano catético	Afectividad	El acto profesional lo define de acuerdo con el nivel de gratificación y es motivador para el alcance de sus metas.	Gusto Placer Satisfacción
Integración	Plano cognitivo	Particularismo	La integración del diseñador en sus relaciones e interacciones durante el	Beneficio Logro de expectativas

			acto profesional definidas por la significación de gratificación que le representa el propio acto.	Perfeccionamiento
	Plano catético	Difusividad	Las relaciones que surgen del acto profesional que son condicionadas por el diseñador de acuerdo con la gratificación recibida.	Compromiso  Disposición  Agrado  Armonía
Latencia	Plano cognitivo	Cualidad Adscripción	Cualidades del acto profesional del diseñador industrial que se definen mediante los patrones culturalmente prescritos.	Investiga  Aplica  Innova
	Plano catético	Neutralidad	La inexistencia de afecto al acto profesional relacionado con los patrones culturales que lo definen.	Sensibilidad  Experiencia  Motivación

Fuente: Elaboración propia con base en Reyes y Pedroza (2015)

**Tabla 6.** Operacionalización de la categoría de actor; operacionalización de variables, dimensiones e indicadores

Variable	Dimensión	Definición de las dimensiones	Definición operativa	Indicador
Adaptación	Plano cognitivo	Universalismo	La conducta del diseñador en su acto profesional se define de acuerdo con sus creencias y conceptos generalmente aceptados.	Planea Conceptualiza Dirige Realiza Evalúa
	Plano catético	Especificidad	La conducta del diseñador en su acto profesional se define de acuerdo con sus emociones y sentimientos.	Siente Valora Disfruta
Alcance de metas	Plano cognitivo	Desempeño	El alcance de metas del actor se encuentra definido de acuerdo con el concepto que este tiene de su propio desempeño.	Logro Visión Desempeño Éxito profesional
	Plano catético	Afectividad	El alcance de metas del actor se define de acuerdo con las emociones producto de las gratificaciones que	Aceptación Reconocimiento Prestigio

			este obtiene en la ejecución de sus actos profesionales.	
Integración	Plano cognitivo	Particularismo	Las relaciones e interacciones del actor se orientan de acuerdo con sus ideas e intereses personales.	Conocimiento Comunicación
	Plano catético	Difusividad	Las relaciones e interacciones del actor con el acto profesional se definen según las emociones y sentimientos con respecto al objeto.	Disfruta Complacer Apasionar
Latencia	Plano cognitivo	Cualidad	Interés del actor hacia las características culturales que definen su profesión.	Racionalidad Reflexividad
	Plano catético	Neutralidad	El interés del diseñador hacia su profesión se manifiesta en la medida que le otorga beneficio valorable o gratificable.	Indiferencia Apatía Insensibilidad

Fuente: Elaboración propia con base en Reyes y Pedroza (2015)

**Tabla 7.** Operacionalización de la categoría de rol; operacionalización de variables, dimensiones e indicadores

Variable	Dimensión	Definición de las dimensiones	Definición operativa	Indicador
Adaptación	Plano cognitivo	Universalismo	La adaptación del diseñador a su rol profesional en relación con sus creencias como cánones de validez universal.	Planea Conceptualiza Dirige Realiza Evalúa
	Plano catético	Especificidad	La adaptación del diseñador a su rol profesional en relación con sus sentimientos y emociones.	Siente Valora Disfruta
Alcance de metas	Plano cognitivo	Desempeño Adquisición	El alcance de metas del diseñador de acuerdo con su rol profesional y en relación con su idea de desempeño.	Logra Visión Desempeño Éxito profesional
	Plano catético	Afectividad	El alcance de metas del diseñador de acuerdo con su rol profesional y en relación con la gratificación que obtiene.	Aceptación Reconocimiento Prestigio



Integración	Plano cognitivo	Particularismo	Las relaciones del diseñador de acuerdo con el rol profesional que ejerce motivado por su propio beneficio.	Conocimiento Comunicación
	Plano catético	Difusividad	Las relaciones del diseñador de acuerdo con el rol profesional que ejerce con dominación de interés de gratificación emotiva.	Disfruta Complace Apasiona
Latencia	Plano cognitivo	Cualidad	La elección de ejecución del rol de acuerdo con la modalidad del acto profesional.	Racionalidad Reflexividad
	Plano catético	Neutralidad	La elección de ejecución del acto profesional sin interés afectivo por el mismo.	Indiferencia Apatía Insensibilidad

Fuente: Elaboración propia con base en Reyes y Pedroza (2015)

**Tabla 8.** Operacionalización de la categoría de estatus; operacionalización de variables, dimensiones e indicadores

Variable	Dimensión	Definición de las dimensiones	Definición operativa	Indicador
Adaptación	Plano cognitivo	Universalismo	La adaptación del profesionista a la posición que ocupa en el sistema profesional.	Conceptualiza Planea Dirige Realiza Evalúa
	Plano catético	Especificidad	La adaptación del profesionista a la posición que ocupa en el sistema profesional en relación con sus emociones.	Siente Valora Disfruta
Alcance de metas	Plano cognitivo	Desempeño	El estatus del diseñador como producto de la relación entre las metas que persigue y su idea de desempeño profesional.	Logra Visión Desempeño Éxito profesional
	Plano catético	Afectividad	El estatus del diseñador como producto de la relación entre las metas que persigue, sus emociones y sus afectos.	Aceptación Reconocimiento Prestigio

Integración	Plano cognitivo	Particularismo	El estatus del diseñador en el sistema profesional de acuerdo con su integración social y sus ideas y pensamientos.	Conocimiento  Comunicación
	Plano catético	Difusividad	El estatus del diseñador en el sistema profesional de acuerdo con su integración social desde el sentido emocional y afectivo.	Disfruta  Complace  Apasiona
Latencia	Plano cognitivo	Cualidad	La posición que el diseñador debe ocupar en el sistema social de acuerdo con los patrones culturalmente prescritos.	Racionalidad  Reflexividad
	Plano catético	Neutralidad	La indiferencia del diseñador hacia el estatus al que pertenece dentro del sistema social.	Indiferencia  Apatía  Insensibilidad

Fuente: Elaboración propia con base en Reyes y Pedroza (2015)

### Instrument

A Likert-type scaling (1932) was applied to a sample of 20 professional industrial designers with the characteristics of having obtained their professional title and practicing their profession. Likert-type scales allow dimensioning attitudes, in this case; also variables based on the assignment of scores to different items according to their positive or negative position. Here, the degree of agreement and disagreement was measured in five positions: 1 = Totally disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Totally agree. The sample was defined considering the size of the population, which in this case was of a finite type:

324 designers graduated from the UAEM. The formula for finite population sampling was applied.

The test consisted of applying, through information and communication technologies (ICTs) —email, WhatsApp and Messenger—, an instrument with 206 questions that measured the variables: Adaptation (behavioral system), Achievement of goals (system of personality), Integration (social system) and Cultural Patterns (cultural system), all of them based on two dimensions: cognitive and catetic or affective. The categories evaluated were: Role, Status, Act and Actor (the industrial designer).

## Results

The results presented below correspond to the analysis of each of the questions and answers corresponding to the questionnaire in which the four concepts are valued: role, actor, act and status. It should be noted that the actor is, in this scenario, the industrial designer and the act is his professionalism, which can be materialized in the producer-entrepreneur, teacher-academician or self-employer-entrepreneur type.

According to the analysis of the answers, the results that had the greatest incidence in the Agree and Totally Agree positions are presented. They are summarized below as statements. These results are consistent with the job skills that professionals must possess by 2025, shown in Table 1.

- The actor maintains an evaluative attitude during his professional act.
- The actor cares about his role.
- The actor attaches importance to professional success.
- The actor is aware that his knowledge determines his success.
- The actor thinks that within his role it is important to direct.
- It is characteristic that the actor has achievements.
- The current role played by the actor does not concern you.
- The actor conceptualizes, whatever his professional role may be.
- The actor thinks that it is necessary to value when exercising his profession.
- The actor feels adapted to his profession according to how he conceptualizes it.
- The actor is not ashamed of his designer role.
- The actor is not bored with his current professional role.

- The actor agrees that his professional integration is determined by a number of different factors, not just knowledge of him.
- The actor is passionate about his current position.
- It is important for the actor to feel accepted.
- Feeling is important for the actor.
- The actor did not arrive at the activity performed by chance.
- The actor thinks that it is necessary to have vision to be a designer.
- For the actor, his role is not indifferent.
- For the actor, his achievements have to do with his values.
- The actor is not indifferent to achieve.
- The actor thinks that design is a creative process that requires research.
- The actor enjoys life.
- The actor agrees that professional status and prestige are linked.
- The actor agrees that it is characteristic to carry out his ideas.
- The actor reflects on his actions.
- The actor does not agree that designing can be an insensitive act.
- The actor achieves his purposes as a person.
- The actor enjoys who he is as an individual.
- The actor is a sensitive person.
- The actor agrees that his professional status gives him prestige.
- For the actor, achieving is one of his characteristics.

## Discussion

A contribution of this article is the approach of the attitude of industrial designers towards sustainable development. In the specialized literature, the relationship between industrial design and graphic design with sustainability was found in terms of professional and academic solutions, but not with respect to attitudes towards them; for example, the nine principles of design in sustainable development, which are summarized in care, quality, vitality, practical capacities for the diversity of life and species in community in their ecological environment (Sánchez, 27 de July 2020). These nine principles differ from the results found in this study because it was found that the act of the design professional has to

do with the attitude of the professional, considering in the act the cognitive and the cathetic—or emotional of the subject—as constitutive elements of the attitude.

On the other hand, the thesis that has analyzed the problem from the disciplinary aspect, particularly from graphic design, considers an argumentative discourse towards eco and sustainable design rather than a green design, for which its contribution is oriented towards the promotion of a conscious design focused on design processes (Chávez, 2019). In our case, we analyze the individual who executes the design because we consider him fundamental, strategic and responsible for the act of designing. Thus, it has been argued that the approach to design problems implies the curricular transversality in issues related to sustainability and that the activities in class foster higher-level thinking skills in this area, situating themselves in the educational plane and rescuing the importance of design. cognitive aspect (Puentes, 2020). In this sense, the results obtained in our study regarding the high level of reasoning and intellectualization during the design process are consistent with. Of course, in our case, the investigation remains open to investigate how the professional action of the designer is contributing substantially to sustainability.

In our study, we find that the actor defines himself as reflexive when exercising his professionalism, which coincides with the perspective of Roa (2017), that of industrial design from the reflexive action marked by the logic of social responsibility. The theoretical base from which we start, the Parsonian, contemplates the adaptation to the environment to which the actor belongs through his behaviors, the use of his own cultural patterns, the social interactions he has with other individuals, as well as the scope of the goals you thoughtfully set for yourself.

The designer Ezio Manzini affirms that sustainability is not a discipline, but an attitude (Zamora, 2016). One of our theses holds that design is an attitude, as László Moholy-Nagy (1947) also held, and we have shown that this is defined as the disposition to action. And that can be analyzed from a social approach, in addition to the disciplinary one.

Industrial design as a profession is a faithful representative of the capitalist production system, because it proposes and brings to reality the objective, procedural and systemic materiality of production processes. It provides services in these scenarios that provide economic returns. Simultaneously, in this same situation, it provides solutions to problems in various dimensions of human life. It was born at the same time as technology and the use



of fossil energy—in the first industrial revolution—. Consequently, it has evolved as a profession simultaneously with the arrival of the second, third and fourth industrial revolution. However, the consequences of the excessive use of fossil fuels and irresponsible material production, coupled with little care in environmental matters of the waste produced, have led to negative consequences in terms of sustainability. It is important to review from professional action what are those attitudes that could be considered favorable or unfavorable in this regard. In this study, the attitude of industrial designers as actors before their professional act is interpreted, according to their role and according to their social status.

## Conclusions

The ultimate goal of sustainable development is the improvement in the quality of life of nations, regions and peoples; itself: of the human being. From this point of view, knowing the attitude assumed by the industrial design professional is important because it is an eminently global, liberal, technological, rational and creative profession that provides object baggage, which human beings use in all dimensions of their lives. In this way, an investigation was structured from the field of the sociology of professions, with an innovative method, which offered the possibility of recovering, directly from the voice of industrial design professionals, information about their attitudes towards their own professional act, taking into consideration their role, their status. The Likert-type scaling instrument measures the degree of agreement or disagreement, so it was found that the actors are highly rational professionals: they organize, plan and evaluate their actions. They recognize that their actions are conditioned by their emotions, which is necessary because it allows them to create and innovate. Also, they identify that it is important to be recognized, paid and have professional success. These attitudes are compatible with the profile of professionals that will be required in the short term: individuals who know how to self-manage, who solve problems and who master technology. Individuals who possess analytical and critical thinking, are innovative, original and creative, who solve problems, exercise leadership, have initiative and social influence, resilience, flexibility and stress tolerance.

## Future lines of research

The professions, as an object of study, can be analyzed from different perspectives. In this case, a study from Parsonian sociology was presented, however, the profession of industrial design can also be seen, studied and analyzed from other sociological theories, as well as from behavioral sciences, from education, from the economy or from human development, just to mention a few examples. In the same way, considering the current disruptive context, the study of professions becomes essential. The accelerated technological changes give guidelines for it. Particularly, industrial design is a profession that must be updated dynamically and permanently because its theoretical and empirical basis has to do directly with technological development, without overlooking, of course, the social, cultural, educational, health and economic.

Knowledge of the attitudes from which the professional actor of industrial design recognizes his environment and gets involved in it can provide research professors, immersed in the academy, a clear panorama to propose the design of curricula according to the current moment. In this sense, it is necessary to continue investigating the structural elements of attitudes, the cognitive, the emotional, and the disposition to action of trained designers and designers in the process of training.

On the other hand, in the face of the challenges that humanity faces, training professionals with positive attitudes towards problem solving, capable of self-management, who know how to carry out work with people, who develop and use technologies is a priority to promote responsible designs that are consistent with sustainable development.

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