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Social representations of drivingAn intercultural comparative study between Algerian and French drivers

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Abstract

This study aims to explore the social representations of driving among Algerian and French drivers, through a comparative and intercultural approach. Grounded in the theory of social representations (Moscovici, 1961; Abric, 1994) and Hofstede's cultural dimensions (1980), the research analyzes the influence of collectivism and individualism on the structuring of perceptions related to driving.

The study is based on a characterization questionnaire administered to two samples of drivers, and the data were analyzed using factor analyses and the central core method. Two hypotheses were tested: (H1) in Algeria, representations focus on practical aspects such as cost and the necessity of the vehicle; (H2) in France, they emphasize individual freedom and autonomy.

The results confirm significant differences: Algerians give priority to economic and safety dimensions, while the French value commitment and functionality. These findings, illuminated by the theories of Bandura (1977) and Gaymard (2014), highlight the impact of cultural context on driving behaviors.

These elements open perspectives for road safety policies tailored to the psychosocial and cultural specificities of each country.

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1. Introduction

Understanding road behavior through a psychosocial approach offers a deeper insight into the cultural dynamics that shape driving practices. In a global context marked by significant heterogeneity in social norms, driving The automobile becomes a privileged space for observing social representations, which reveal the values and cultural regulations specific to each society. This study adopts a comparative perspective aimed at exploring how cultural frameworks shape perceptions and behaviors behind the wheel, through the analysis of the social representations of Algerian and French drivers.

1.1 Social representations (SR):

SR are a central concept in social psychology developed by Serge Moscovici (1961), referring to forms of practical knowledge, shared socially, which guide attitudes and behaviors. These representations allow individuals to construct a common reality and to guide their actions in concrete social situations. Applied to driving, they help us understand how drivers make sense of their relationship to the road, to rules, to risks, and to other users (Flament, 1994; Abric, 1994; Gaymard, 2014).

In this study, we use the theoretical framework of social representations in conjunction with the intercultural approach in order to examine the differences between Algerian and French drivers. Two cultural models are central to this approach: collectivism and individualism. According to Hofstede (2010) and Triandis (1995), collectivist societies, such as Algeria, value group cohesion, respect for implicit social norms, and community interests. In contrast, individualist societies, such as France, place emphasis on autonomy, individual responsibility, and personal achievement. These cultural differences influence social representations, including in the field of driving.

The structural model of social representations (Abric, 1994) posits that these are organized in two parts: the central core, composed of stable and shared elements, and the peripheral system, which is more adaptive and contextual. This model allows for the examination not only of the content, but also the structure of representations according to cultural groups. Thus, among Algerian drivers, one might expect the central core to be dominated by practical and economic dimensions (fuel costs, speed), while among French drivers, dimensions valuing freedom, personal responsibility, and ease of movement are more salient.

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The social representation of driving serves as a relevant subject to explore intercultural dynamics, as it mobilizes social, normative, symbolic, and practical dimensions. From this perspective, the present research seeks to answer the following question: how do the cultural frameworks of collectivism and individualism influence the structuring of social representations of automobile driving among Algerian and French drivers?

Two hypotheses guide this investigation:

- *H1: For Algerian drivers, social representations of driving will be centered on practical and constrained elements, notably the necessity of owning a vehicle.*
- *H2: For French drivers, social representations will be dominated by symbolic dimensions such as individual freedom and autonomy.*

By analyzing the salient and secondary elements of these representations using characterization questionnaires and factorial analyses, this study seeks to better understand the cultural basis of driving behaviors and to highlight the psychosocial specificities to be considered in road safety prevention policies.

2. Methodology:

This section describes the methodology used to analyze the psychosocial determinants and driving strategies according to the cultural specificities of French and Algerian drivers. The approach is based on a quantitative method, through a structured questionnaire administered online between May 2023 and January 2024.

- Sampling and Participants

The selection criteria included holding a category B driver's license and residing either in Algeria or in France. The total sample consists of 309 participants:133 French and 176 Algerians, with a balanced gender representation (185 women and 124 men) and an average age of 35.26 years (standard deviation = 9.85).

The French drivers are predominantly female (66.9%) with an average age of 34.80 years. The majority have more than 10 years of driving experience (43.6%). In comparison, the Algerian drivers have a more balanced gender distribution, an average age of 35.60 years, and a higher proportion of novice drivers (34.1% with less than 3 years of experience).

- Justification for the Choice of Countries

The choice of Algeria and France is based on marked cultural, regulatory, socioeconomic, and historical differences. The disparities in road infrastructure, social norms, accident rates, and

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road safety awareness policies make a comparative study of the social representations of driving in these two contexts relevant.

- ***Data Collection Procedure***

The questionnaire was distributed via Google Forms. An initial version was withdrawn and then adapted for Algerian participants. The questionnaire took approximately 20 minutes to complete. The information about the study was clear, and participants were free to withdraw at any time. Anonymity and confidentiality were guaranteed, in accordance with research ethics.

- ***Tools and Instruments***

The final questionnaire includes four validated scales measuring relationship satisfaction, decision-making styles, driving behavior, as well as individualism and collectivism. An additional section was added to collect sociodemographic data.

- ***Characterization Questionnaire***

Based on the work of Flament (2003) and Vèrges (2001), this questionnaire aims to identify the salient elements of a social representation. Participants were required to classify 12 items in successive blocks of 4 according to their degree of characterization. The codingused is that of Gaymard (2003): 1 for 'less characteristic,' 2 for 'not chosen,' 3 for 'more characteristic.'

This method makes it possible to identify the most prominent elements in drivers' social representations by highlighting the asymmetrical distributions of responses. The 12 final items were selected on the basis of exploratory study results and are designed to capture the key dimensions related to driving and its psychosocial determinants.

3. Results

The data coded from 1 to 3 were analyzed using the Mann-Whitney U test, which is suitable for their ordinal nature. A multiple factor analysis was conducted to assess the distinction between Algerian and French drivers based on the 12 items.

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Table N° 1

Mann-Whitney test 'difference between FR and ALG on the 12 mentioned items'

	Sum of Ranks French	Sum of Ranks Algerians	U	P value
Daily means of transport	21133,00	26762,00	11186,000	,393
Pleasure	20732,00	27163,00	11587,000	,872
Necessity	19655,00	28240,00	10744,000	,161
Speed / quickness	21452,00	26443,00	10867,000	,214
Responsibility	21132,00	26763,00	11187,000	,443
Ease	22320,00	25575,00	9999,000	,011
Freedom	20505,50	27389,50	11594,500	,875
Respect	21641,00	26254,00	10678,000	,124
Attentive	20539,00	27356,00	11628,000	,917
Commitment	22154,50	25740,50	10164,500	,036
Expensive fuel	22854,00	25041,00	9465,000	,002
Risky	21007,00	26888,00	11312,000	,587

The statistical analysis, based on the Mann-Whitney U test, identified three items showing significant differences between French and Algerian drivers: ***ease commitment*** *and* ***expensive fuel****. These results were refined using proportion tests and cross-tabulations, supplemented by Chi-square tests, allowing for a closer examination of the association between nationality and the perception of these dimensions.*

1. ***Ease****: Although ease is perceived as an important feature by the majority of both groups, it is more highly valued by Algerian drivers (65.6%) than by theFrench (52%). However, this difference does not reach the threshold for statistical significance. Nonetheless, the Chi-square test reveals a significant association between nationality and this variable ($\chi^2 = 6.621$; $p = 0.037$), suggesting that the perception of driving ease is partially influenced by national cultural and road contexts.*
2. ***Commitment****: Algerian drivers report being more frequently committed (39.1%) than French drivers (27.6%). The Chi-square tests indicate a trend toward*

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significance (p = 0.050), while the linear association test (p = 0.038) highlights a moderate but notable correlation between nationality and perceived commitment. These results suggest differences in the representations of driving responsibility, potentially influenced by social norms and educational practices in road safety.

3. ***Fuel cost:*** *Differences between groups are most pronounced for this item. While 39.2% of Algerian drivers consider the high cost of fuel a salient characteristic, only 17.4% of French drivers share this perception. The Chi-square test confirms this divergence with a high level of significance ($\chi^2 = 16.069$; $p < 0.001$). This result likely reflects the impact of economic inequalities between the two countries on concerns related to driving, particularly in terms of energy expenses.*

- Discrimination test

A Multiple Correspondence Analysis (MCA) was carried out to identify the most discriminating items among the 12 proposed. This method, suitable for qualitative variables, makes it possible to characterize the responses according to the modalities 'more characteristic' and 'less characteristic.'

Table N° 2

The models analyzed for FR and ALG drivers according to MCA

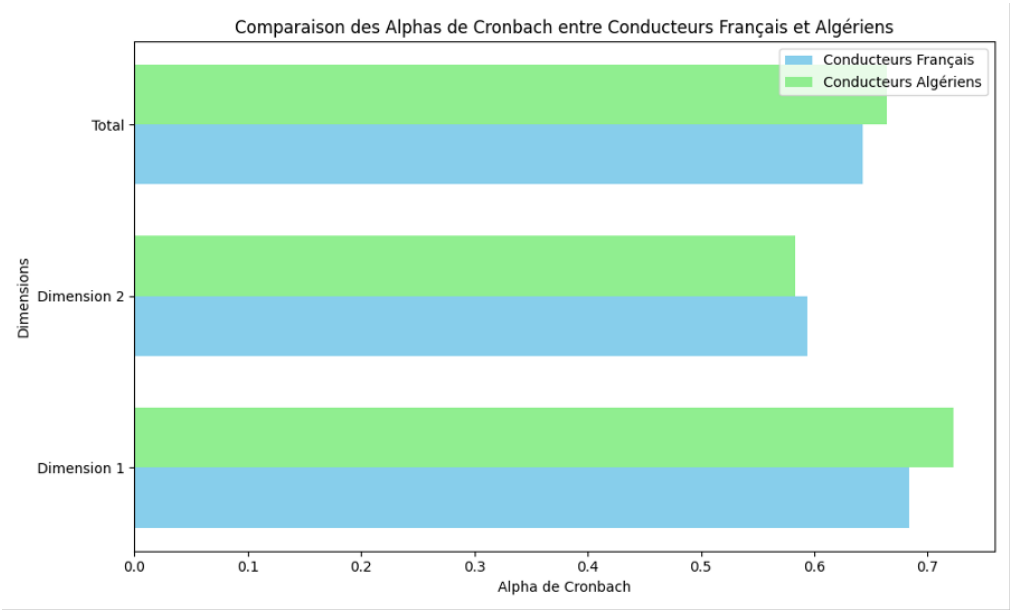
Dimension	Cronbach's alpha (FR)	Variance represented (FR)	Cronbach's alpha (Alg)	Variance represented (Alg)
1	0,684	2,680	0,723	2,966
2	0,594	2,196	0,583	2,146
Total		4,875		5,112
Average	0.643a	2,438	0.664a	2,556

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The analysis of MCA results shows that Algerian drivers display slightly higher internal consistency (α average = 0.664 compared to 0.643 for the French) and greater variability in the first dimension (variance = 2.966 compared to 2.680). Although the differences are minimal, these results suggest slightly more homogeneous structuring of responses among Algerian drivers.

Figure N° 1

comparison of Cronbach's alphas between FR and ALG



Discrimination measure

As observed, the MCA extracted two main dimensions from the data. Each dimension represents a set of categorical variables that are correlated with each other. These dimensions are linear combinations of the original variables and are interpreted as latent factors that capture specific aspects of the data structure.

The values in Table 3 represent the contributions of each variable modality to each dimension for the two countries. These values are indicators of the association between each modality (1 and 3) and each dimension (12 items). Higher values indicate a stronger association.

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Table N° 3
discrimination measures

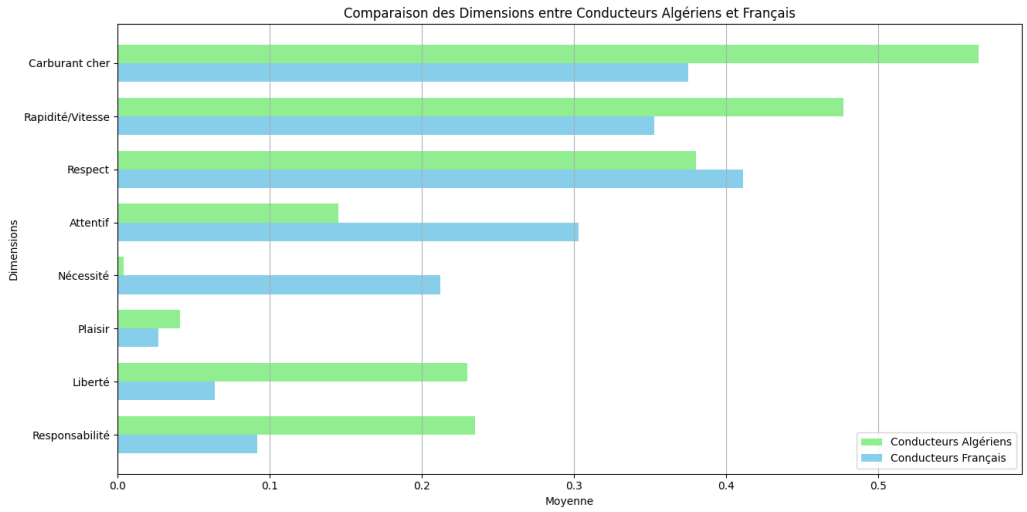
Dimension	Average (Algerian Drivers)	Average (French Drivers)
Daily mode of transport	0,038	0,059
Pleasure	0,041	0,027
Necessity	0,004	0,212
Speed/Rapidity	0,477	0,353
Responsibility	0,235	0,092
Ease	0,354	0,069
Freedom	0,230	0,064
Respect	0,380	0,411
Attentive	0,145	0,303
Commitment	0,332	0,370
Expensive fuel	0,566	0,375
Risky	0,165	0,345

The analysis of the most and least characteristic dimensions highlights pronounced cultural differences between Algerian and French drivers. For Algerians, the central elements (core) of the social representation of driving focus on fuel cost, speed, respect, and vigilance, reflecting economic and safety concerns. In contrast, the French place greater value on following rules, commitment, ease of driving, and the utilitarian function of the vehicle, with less importance given to cost, risk, and pleasure. This reflects a more regulatory and functional approach. These contrasts illustrate the impact of socioeconomic and cultural contexts on driving perceptions and behaviors.

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Figure N° 2

comparison of dimensions between FR and ALG



The comparative analysis of the social representations of driving highlights two distinct central cores.

- ***Among Algerian drivers**, the most characteristic aspects are: fuel cost, speed, respect, and vigilance, reflecting a dominant concern for economic and safety aspects.*
- ***Among French drivers**, the core revolves around respect for the rules, engagement in driving, ease, and daily use of the vehicle, highlighting a focus on compliance and functionality.*

Peripheral dimensions also differ: Algerians relegate necessity, pleasure, freedom, and responsibility to the background, while the French attach less importance to cost, risk, pleasure, and vigilance. These differences reflect specific cultural priorities, influenced by the economic, social, and regulatory contexts unique to each country.

4. Discussion

The results of this study confirm the importance of social representations in the analysis of driving behaviors, while also revealing significant differences between Algerian and French drivers. These gaps are explained by cultural, economic,

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regulatory, and demographic factors, consistent with the theoretical frameworks of Moscovici (1981),

Bandura (1977), Hofstede (1980), and Gaymard (2007, 2016, 2021). The structural model of social representations (Abric, 1994) made it possible to distinguish central—stable and shared—dimensions from peripheral dimensions, which are more sensitive to context.

Among Algerian drivers, the core focus is dominated by economic and safety concerns such as the high cost of fuel, speed, and vigilance. This profile reflects the context of economic constraints and often deteriorated road infrastructure (Benraad, 2016). Conversely, French drivers emphasize personal commitment, respect for rules, ease of driving, and convenience, which points to a well-established road safety culture and a social organization structured around conformity (Gaymard, 2007; Hofstede, 2010).

Comparing the core and peripheral elements allows for a nuanced view of some initial hypotheses. Contrary to hypothesis H1, the necessity of owning a vehicle is not part of the core for Algerian drivers, although it remains present on the periphery. This suggests that, while vehicle ownership is important, it is outweighed by more pressing concerns such as fuel economy and travel speed. Similarly, hypothesis H2, which posited that individual freedom would be central for French drivers, is not supported: this dimension is not among the dominant factors. Their perceptions seem to be more oriented toward practical and normative aspects than toward symbolic values.

The analysis of driving styles by gender also highlights dynamics specific to cultural contexts. In France, women display more impatience than men, which could reflect tension between traditional roles and the assertion of their autonomy in public spaces (Gaymard & Tiplica, 2014). In Algeria, men adopt a riskier driving style, perceived as a sign of bravery or social competence within a hierarchical gender system. This interpretation aligns with Bandura's social learning theory (1977), which posits that behaviors are shaped by imitation and social reinforcement.

Cultural differences are also expressed through economic priorities. Algerian drivers seek to reduce transportation costs, related to stronger financial pressures. In France, driving is seen as an activity integrated into a stable lifestyle, facilitated by efficient infrastructure. These contrasts are consistent with Schwartz's model (1994),

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which shows that cultural values—whether focused on survival or self-fulfillment—influence practical behaviors.

From a demographic perspective, age, experience, gender, and family situation clearly influence driving styles. Experienced drivers adopt more cautious behaviors, while young Algerians show a greater tendency toward risk, often seeking social recognition. This dynamic is again illuminated by Bandura's theory, which emphasizes the effect of social models in behavioral learning.

Finally, the results reveal deep divides in terms of sociocultural norms. The French, influenced by values of moderate individualism, value security, conformity, and civic engagement. In contrast, Algerians operate within a more collectivist framework, with a strong social hierarchy and concerns for economic efficiency. The models of Hofstede (1980) and Triandis (1995) help to situate these differences within structuring cultural dimensions such as power distance or uncertainty avoidance. Social representations (Moscovici, 1981) appear here as cognitive and cultural filters through which drivers construct their relationship to the road and to other users.

***In summary**, these results highlight the decisive influence of the sociocultural and economic context on social representations of driving. While French drivers are more oriented towards norms of conformity and comfort, Algerian drivers express pragmatic and economic priorities. These differences call for contextualized road safety policies that are sensitive to local social representations. Integrating these representations into the development of public policies appears as a major lever for improving road safety in culturally differentiated contexts.*

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