





Compared perception of industry in France, Germany, Japan and the United States







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Foreword



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The purpose of the study *Compared Perception of the Manufacturing sector in France, Germany, the U.S.A. and Japan* is to evaluate and understand how this essential sector for economic development is perceived by the broad public in four of the most industrialised countries in the world, and to reveal similarities and differences within distinct societal realities and industrial traditions.

For this purpose, the study focuses on analysing the manufacturing industry in the light of four fundamental issues: relationship with the State, attractivity and overall perception within society, the evaluation of its capacity to innovate and ability to confront crucial challenges of its time.

This study has revealed trends and specific features already relatively well-known, such as a greater protectionist trend and the more important role of the public sphere for the French, a high attractiveness and better integration in the domestic economy in Germany, or a greater liberalism in American society which is the most in favour of foreign investments in the country.

Some counter-intuitive results also appeared, in particular the Japanese population's deeply negative perception of the innovation capacity of their manufacturing industry despite the country accounting for the greatest number of innovative companies.

In the context of an ever-expanding services sector, Western societies are sometimes described as post-industrial as per the expression coined by American sociologist Daniel Bell, describing the fact that the primacy of agriculture and manufacturing has waned in favour of services. Yet our study suggests that the manufacturing sector still has a role to play in those economies it had a major part in shaping and propelling forward as global leaders.

Despite some variations in the results, manufacturing is indeed perceived as a globally attractive sector where the State must play an important role. Far from the caricature of an outdated, archaic sector, this industry is widely considered as a key actor at the heart of the problems of its time and looking forward to the future... A strong message for the industry!



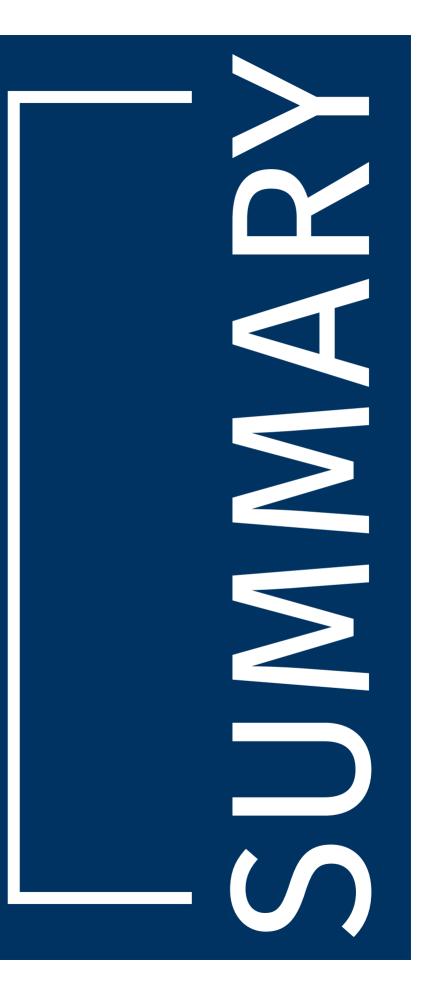
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1 - The State still has a role to play in the national manufacturing sector, in particular for the French

DIVERGING OPNIONS ABOUT THE IMPORTANCE OF INDUSTRY IN THE NATIONAL ECONOMY

In all countries, **most people surveyed consider that industry occupies a sufficient place in the national economy**. However, **the French and Japanese tend to think that its contribu-tion to the country's GDP is insufficient (respectively 42% and 37%)**. They are significantly more favourable than the Americans and the Germans to its development.

The Germans are highest in judging (75%) that manufacturing has enough importance in the country's economy, demonstrating a positive perception of its integration in the national activity. The Americans are, as for them, the most opposed to an increased contribution of manufacturing to the national economy, as 21% consider its current part is exaggerated.

A GENERAL TREND AGAINST A DECREASE IN THE STATE'S FINANCIAL PARTICIPATION IN THE SECTOR, EVEN THOUGH THOSE SURVEYED ARE MORE IN FAVOUR OF PRIVATE FUNDING

In all countries, **surveyed participants are generally more in favour of mostly private funding of the manufacturing sector (41% to 47%, compared to between 17% and 24% for mostly public funding)**. This trend is **more prominent for the Germans** who show the most favourable trend for private funding (47%) and the least for mostly public funding (17%, same as Japan). Conversely, **the strongest inclination towards mostly public financing is found in France (24% of those surveyed)**.

At the same time, all countries present **extremely high figures against reducing public investments in the nation's manufacturing sector (between 90 and 95%)**. Two trends appears: on the one hand, France and Germany for whom the status quo wins against the reinforcement of such participation. On the other hand, Japan and the U.S.A are more favourable to an increase in the public funding of the manufacturing sector. **The most favourable to a reinforcement is Japan**, the only country where over half the population shares this opinion (52%).

Reducing the State's participation in the financing of industry remains the view of an extremely small minority in all countries surveyed. This view however is the most popular in France, where 10% of the population express their wish to see public investments in this sector decrease.

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THE FRENCH ARE OVERALL THE MOST FAVOURABLE TO PROTECTIONIST MEASURES

While all countries overwhelmingly express a preference for the State to favourably consider national companies when tendering for public projects, France appears the most protectionist country when it comes to its manufacturing industry. The country is characterised by a strong desire of the French people for industrial protectionism regardless of age, gender or activity.

Even though in all countries **most people surveyed are in favour of keeping their national manufacturing industry financed by foreign funds (between 45% and 61%), the French lead in expressing their will to see this rate reduced (36%)**, noticeably more than the Japanese (20%) and the Americans (23%). In France, the younger age brackets are significantly less opposed to this type of funding, but still more than their American and German counterparts.

With 28% of the respondents in favour, the Americans are the most open to increasing manufacturing financing by foreign funds, the most reluctant being the Germans (15%), then the French and the Japanese (19%).

$2\,$ - Despite disparity between countries, especially in the Japanese case, manufacturing remains a globally attractive industry that arouses a keen interest among the surveyed persons

WHILE STRONG DIFFERENCES EXIST BETWEEN COUNTRIES REGARDING THE PERCEIVED QUA-LITY OF WORKING CONDITIONS, IN PARTICULAR BETWEEN JAPAN AND THE OTHER COUN-TRIES...

On all questions regarding manufacturing attractiveness, Japan records the least positive results and **the harshest perception of its industry**. A most distinctive characteristic is that these results barely vary across age, gender and occupation of those surveyed, highlighting **that the negative perception and very low attractiveness of industry is shared as expressed by most of the Japanese population**.

Thus, Japan is the country that judges that working conditions in manufacturing are harsher than in other sectors (47%). It is followed by France (31%) where the 18-34 y.o judge those conditions the most favourably, thereby revealing **a shift in perception of manufacturing in France**, which evolutions contribute to make it more attractive to the young.

The Germans are those who consider working conditions in manufacturing the most positively. It is the only country where inhabitants regard them as easier (22%) than harsher (18%).

... MANUFACTURING REMAINS ATTRACTIVE FOR YOUNG GRADUATES AND FOR WOMEN

There are differences in the perception of industry attractiveness for young graduates and women.

The Germans rank first when evaluating the sector's attractiveness by those who are just entering the labour market (55% consider it as 'very attractive'), particulary because of the importance of manufacturing in the German economy and to the valorisation of apprenticeship-based training in society. At the same time, about a third of the French (31%) and the Americans (35%) view manufacturing as offering good job opportunities, while only 16% of the Japanese think so.

With the exception of Japan where 33% would not recommend to a young graduate to work in industry, 36% of the French and Americans and 45% of the Germans would strongly recommend them to do so. **Thus manufacturing retains some desireability and remains seen as a professional sector in which newer generations can have a career.**

Regarding the place of women in manufacturing, a majority of French (62%) and Americans (72%) regard this industry as effectively offering fair conditions for a fulfilling carreer (47%). In Germany the 43% rate is explained by the fact that a large number of the respondents consider that manufacturing does not present differences with other sectors on that matter, underlining a better integration of industrial practices in the overall economical context. Japan is the only country where more respondents answered 'No' than considered that women can undertake a fulfilling career in manufaturing sector (25% vs. 23%).

RESPONDENTS JUDGE THEIR KNOWLEDGE OF THE MANUFACTURING SECTOR RATHER GOOD AND EXPRESS A KEEN INTEREST IN ITS PROBLEMATICS

In most countries, **a large portion of the population think they have a good or a very good knowledge of industry**. 43% of the French, 51% of the Germans and 52% of the Americans (and only 18% of the Japanese) say so. This feeling is always more prominent in men but also in younger generations for the French, German and American societies, emphasising some success for industry in raising interest in the parts of the population that will be building its future.

Moreover in all studied countries and particularly in France, **most people surveyed express their will to know more about the manufacturing sector of their country**: 69% in Japan, 77% in the U.S.A., 82% in Germany and 86% in France.

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3 - There are important variations in perception within the population of the studied countries regarding the manufacturing sector's capacity to innovate, and the effects of mechanisation on production lines

RESPONDENTS EXPRESS VERY DIFFERENT PERCEPTIONS OF THEIR COUNTRY'S MANUFACTU-RING SECTOR'S CAPACITY TO INNOVATE...

Respondents from the United States (49%) and Germany (43%) judge in the largest numbers that their industry is more innovative than the world average. The Americans also perceive their management strategies to be the most innovative in the industry, whereas Germany is the only country with over half the respondents (51%) stating that these strategies are standard, thus emphasising, from a managerial point of view, an advanced state of standardisation of the manufacturing sector's processes with other industries.

The Japanese reveal extremely poor estimations of the real levels of innovation in their country. Despite Japan being the most innovative country of the poll, less than a fifth of its surveyed population (16%) think that it really is the case, and more than a quarter (26%) doubt it is at all. This perception is shared across the range of respondents regardless of age, occupation or gender.

France sits in a median position compared to the other countries, with 26% of its inhabitants qualifying the manufacturing industry as 'very innovative', mainly within populations working in this sector and amongst the 18-34 y.o. bracket. **In addition, France's managerial processes are perceived to be the least innovative by its inhabitants (26%)**, however this trend is less popular among the 18-34 y.o. bracket which suggests the beginning of a steady change in the perception by the French of a management integrating more effectively innovation in the industry.

... AND OF THE ADVANTAGES OF AUTOMATION IN PRODUCTION LINES, THE BENEFITS OF WHICH ARE THE MOST APPRECIATED BY THE JAPANESE AND THE LEAST POPULAR AMONG THE AMERICANS

Even though they generally consider negatively their country's manufacturing innovative capacity, **the Japanese systematically highlight the advantages of automation** (increase in productivity: 70%, improved working conditions: 65%). On the contrary, **the Americans are the last to acknowledge the benefits of automation** compared to other countries (increase in productivity: 55%, improved working conditions: 44%)

As for the French and Germans, they share very similar ideas on the question of productivity gain and working conditions generated by automation. Among the French more than the Germans, the 18-34 y.o lag behind the rest of the population to acknowledge the benefits of automation.

A LARGE PROPORTION OF THE RESPONDENTS CONSIDER THAT AUTOMATION HAS A NEGATIVE IMPACT ON EMPLOYMENT... THIS TREND BEING LESS OBVIOUS IN JAPAN

Apart from Japan, results are very similar across studied countries regarding the consequences of automation on employment. **Most of the respondents (43% to 47%) think that mechanisation in manufacturing has a negative impact on employment (24% in Japan).**

This perception is more widely shared in France especially among the 18-34 y.o., 65% of them thinking that automation destroys jobs. This is a French specificity since in Germany and the United States, the negative impact of automation is mostly felt amongst the 35-44 y.o. This opinion is also more prominent among the manufacturing workers in France than anywhere else.

The overall more positive perception of automation in Japan can be explained by a double specificity in their demographics: a dramatic drop in the population (minus 39 million inhabitants between 2015 and 2065 according to the *National Institute of Population and Security Research*) on the one hand, and a very strict, cautious immigration policy on the other hand. Automating production lines is therefore seen as a means to counterbalance the decrease and aging of the active population while remaining competitive on an international level.

4 - MANUFACTURING IS GENERALLY PERCEIVED AS A SECTOR MINDFUL OF THE CHALLENGES OF ITS TIMES AND FOCUSED ON THE FUTURE

THE MANUFACTURING INDUSTRY MUST STAND AS A PRIME ACTOR IN PROTECTING THE ENVI-RONMENT

While the majority of respondents see their manufacturing sector as within the average in the global production of CO₂ (between 57% and 68%), **between a quarter and a third of them consider it remains a highly polluting industry. Consequently the necessity for this sector to take an active part in protecting the environment is a concept widely shared across all countries**, with between 71% and 89% of the surveyed judging as imperative to take up the challenge.

Of all those surveyed, the Japanese are the least likely to estimate that their manufacturing sector is polluting. In that regard, 29% say that it is not necessarily - or even at all - destined to undertake such environmental initiatives.

It is worth mentioning that **a distinctive feature appears in the 18-34 y.o bracket in all coun-tries when it comes to the environmental issue**: even though this age bracket is systematically first in saying that manufacturing is a 'highly polluting' industry, it also lags behind when it comes to stating that the industry should undertake environmental protection initiatives.

Summary

MOST RESPONDENTS, AMONG WHICH WORKERS OF THE MANUFACTURING INDUSTRY COME FIRST, DESCRIBE GLOBALISATION AS AN OPPORTUNITY FOR THIS SECTOR

In all countries **globalisation is perceived by the vast majority of those surveyed as an op-portunity for the manufacturing sector** (between 64% and 79%). It is especially notable in the United States (75%) and in Germany (79%).

Japan and France are slightly behind in that trend (64% for both) which can be explained by the fact that these are **the two countries that consider manufacturing as part of their national heritage**: 51% in the U.S.A., 56 % in Germany, 62% in Japan, 64% in France.

In all countries, manufacturing workers are ahead of their fellow countrymen with occupations in different economic sectors in considering that globalisation is an opportunity for their industry: +2% in Japan, +5% in Germany, +12% in the U.S.A. and +14% in France.

APART FROM JAPAN, MOST RESPONDENTS SEE MANUFATURING AS A SECTOR TURNED TOWARDS THE FUTURE

With the exception of the Japanese (40%), **the manufacturing sector is described by over half of the respondents as looking towards the future.**

Ahead of the Americans (52%) and the Germans (55%), the French are the most confident in the durability of the manufacturing industry and its capacity to undertake tomorrow's challenges (62%).

This opinion is systematically expressed more often by the people working in the manufacturing sector.

Summary



This study is based on a dedicated opinion poll carried out by Publicis Media and based on the following methodology:



Number of interviews and method 2000 interviews (500 per country) conducted with a representative sample of the population selected with the quota method applied to the variables gender, age, living area and occupation sector



People aged 18 to 69 and living in one of the following countries: France, Germany, U.S.A. and Japan



Poll dates

Poll conducted between 7th-16th March 2018



Survey conducted Online (CAWI) and on Mobile devices (CAMI)



1. INDUSTRY AND THE STATE

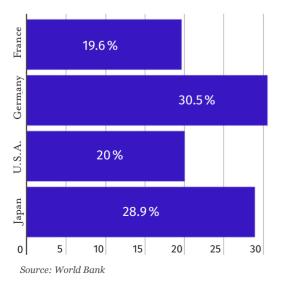
The State still has a role to play in the manufacturing sector, in particular for the French

THE FRENCH, FOLLOWED BY THE JAPANESE, ARE MORE NUMEROUS IN STATING AS 'INSUFFI-CIENT' THE PLACE OF INDUSTRY IN THEIR COUNTRY'S ECONOMY



How would you rate the place of industry in your country's economy?

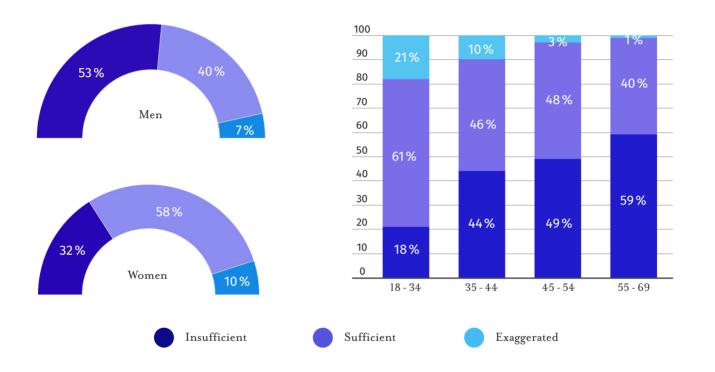
In all countries, most people surveyed consider that manufacturing plays a sufficient part in the national economy. However, the French and Japanese tend to think that its contribution to the country's GDP is insufficient (respectively 42% and 37%). It is then in France that the respondents are the most in favour of developing their industry, and significantly more so than the Americans (17%) and the Germans (13%).



Share of manufacturing in the added value in 2015 (% of the GDP)

This particular trait can be explained by the lower share of industry in France's added value. In 2015 (most recent available data), it made up for 19.6% of the national GDP whereas in the other countries this share was more significant, in particular in Japan (28.9%) and in Germany (30.5%).

Unlike in Japan and in the U.S.A., this relationship between the percentage of manufacturing in the GDP and the perception of its contribution in the national economy is also relevant in Germany, where the manufacturing sector is more developed and where the inhabitants are lesser to judge as insufficient its contribution to their economy. In France, an increase in the contribution of manufacturing to the economy is mostly requested by men (the only country where this is the case) and older generations.



Results by gender in France

Results by age bracket in France

This intergenerational gap does not exist in Japan where the results are overall consistent and the differences between age brackets much smaller: 34.3% of the 18-34 y.o. and 35.5% of the 55-69 y.o. think manufacturing plays an insufficient part in the Japanese economy (with a peak at 43.2% for the 45-54 y.o.). 57.6% of the 18-34 y.o. and 59.8% of the 55-69 y.o. say on the contrary that manufacturing's contribution is sufficient (with a lower rate of 45.6% in the 45-54 y.o. bracket).

The Germans are highest in judging (75%) that manufacturing has enough importance in the country's economy, demonstrating a positive perception of its integration in the national activity. This opinion is most widely shared in the 45-54 y.o. bracket (84.3%) and the least popular among the 18-34 y.o. with a rate of 68.8%, still above the other countries' results in the same age bracket (56.8% in the U.S.A., 57.6% in Japan, 60.8% in France).

The Americans, as for them, are the least favorable to an increased contribution of manufacturing to the national economy, as 21% consider its current part is exaggerated. This opinion is mostly popular among men (26.5% vs. 16.2% of women) and the younger generation where 33.1% of the 18 - 34 y.o. are involved (as opposed to 7.3% of the 55-69 y.o.), a much superior rate compared to the other countries.

IN A CONTEXT WHERE MOST RESPONDENTS ARE IN FAVOUR OF MOSTLY PRIVATE FUNDING OF INDUSTRY, ESPECIALLY IN GERMANY, THE FRENCH ARE THE HIGHEST IN FAVOUR OF AN INTERVENTION OF THE PUBLIC SPHERE.

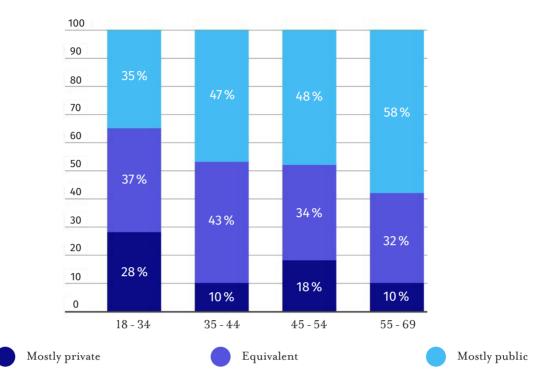
Should the funding of manufacturing be public or private?

100 90 20% 17% 17% 24% 80 70 36% 41% 60 36% 35% 50 40 30 44% 20 47% 41% 42% 10 0 U.S.A. Germany France Japan Mostly private Equivalent Mostly public

In each country, surveyed participants are generally more in favour of mostly private funding of the manufacturing sector.

This inclination is more prominent with the Germans who show the most favourable trend for private funding (47%) and the least for mostly public funding (17%, same as Japan). This is a reflection of the country's funding processes, which are characterised by a strong closeness between the industry and banks. It is particularly noted in the *Mittelstand*, the SMEs and MidCaps playing an important part in the German growth and competitiveness, and benefiting from a facilitated access to bank loans thanks to their privileged partnerships with local banks.

This German preference for the private sphere is more marked amongst men (59.2% are in favour of private funding vs. 34.2% of women) and the older generations with 58% of the 55-69 y.o. preferring mostly private funding and 10% a mostly public one (respectively 35% and 28% for the 18-34 y.o.).



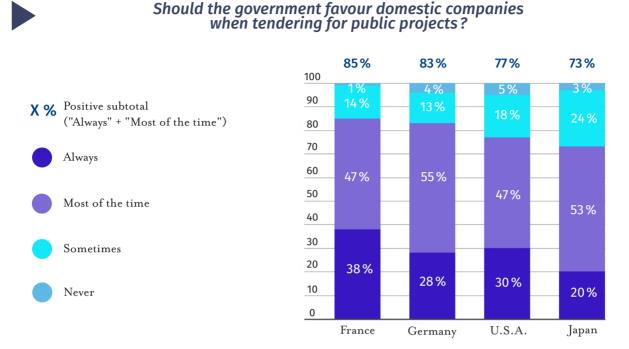
Results by age bracket in Germany

France is where the strongest will for a public funding (24% of the respondents) is expressed, mostly supported by workers of the manufacturing sector and to some extent, by the youngest who remain nonetheless more in favour of private backers.

Working in the gamma base Other industries Other industries

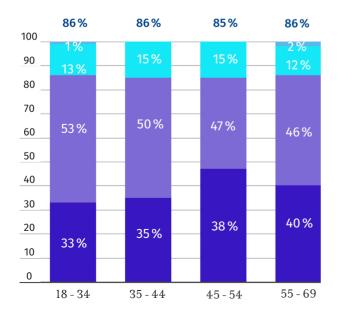
Results by activity sector in France

THE FRENCH STAND OUT IN THE OVERALL TENDANCY TO PREFERRING THAT THE PUBLIC AUTHORITIES FAVOUR DOMESTIC COMPANIES



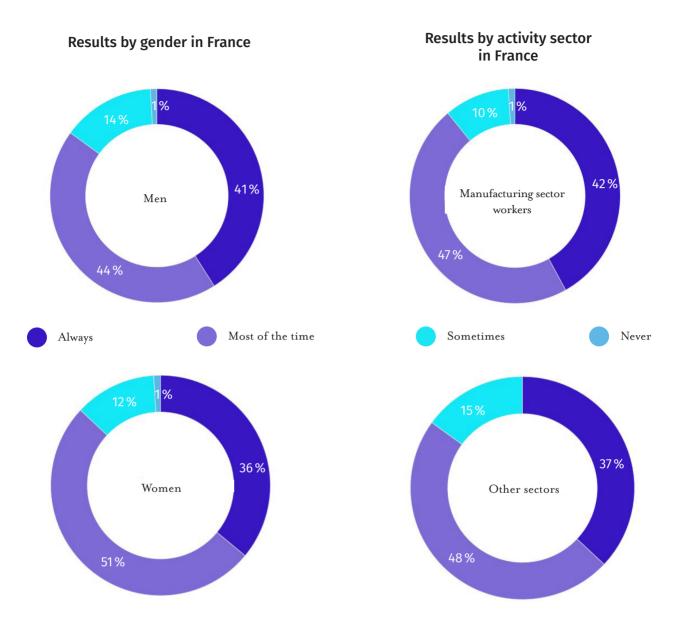
While all countries overwhelmingly express a preference for the State to favourably consider national companies when tendering for public projects, France appears the most protectionist when it comes to its manufacturing industry with a subtotal of positive answers of 85%.

Despite a few gaps between the various categories of respondents (notably the high rate -47%- of 45-54 y.o. thinking that the State should always favour national businesses), these differences are relatively small in France. The country is characterised by a strong desire of the French for industrial protectionism, with all categories expressing so in a high and steady subtotal of positive answers (85% to 89%).



Results by age bracket in France



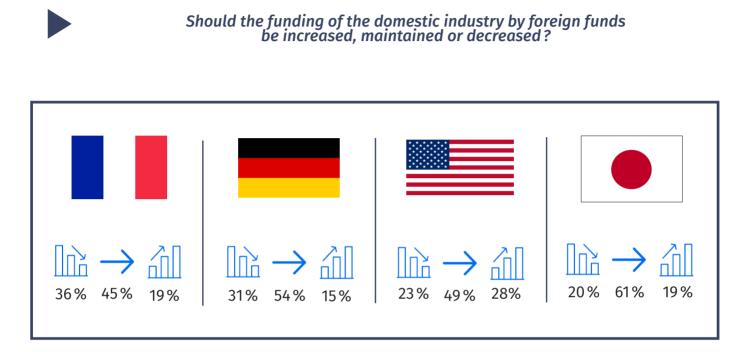


Moreover, the results in Germany and Japan (the least protectionist country of all with a subtotal of positive answers of 73%) are also consistent, reflecting a widely shared approach on the question of the beneficiaries of public tendering.

The American case however differs in a number of ways. Workers in the manufacturing sector are more assertive regarding this issue with 51.1% thinking that the government should "always" favour American companies, as opposed to 25.1% of workers in other sectors stating so (positive subtotal of 90.1% vs. positive subtotal of 74.4%).

The same goes for men who are 36.4% to answer "always" (vs. 24.3% of women) and the 18-34 y.o. bracket who are 34% to answer "always" vs. 18.6% of the 55-69 y.o., highlighting the rise of protectionist traits within the younger generation in a country bearing a strong liberal heritage. These traits are however less visible when it comes to the question of foreign funds supporting the national industry, to which the younger Americans are the most favourable.

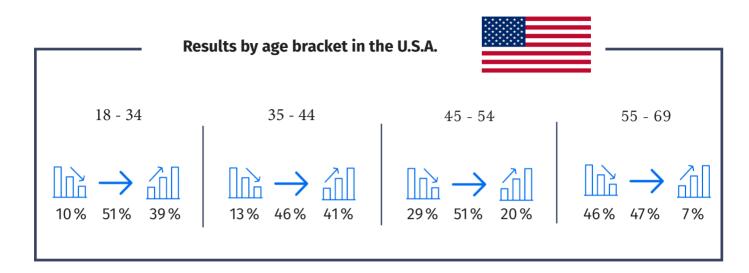
THE FRENCH ARE THE MOST IN FAVOUR OF DECREASING FUNDING OF INDUSTRY BY FOREIGN FUNDS WHILE THE AMERICANS ARE THE MOST OPEN TO INCREASING IT



Even though in all countries most people surveyed are in favour of keeping their national manufacturing industry financed by foreign funds (between 45% and 61%), the French lead in expressing their will to see this rate reduced (36%), noticeably more than the Japanese (20%) or the Americans (23%). This opinion is also more popular among the people who don't work in the manufacturing industry.

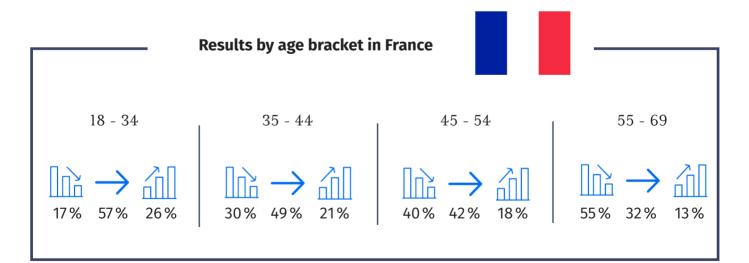
With 28% of the respondents stating so, the Americans are the most open to increasing this type of funding in their manufacturing industry, the most reluctant being the Germans (15%), then the French and the Japanese (19%).

This American will to increase foreign backers' intervention is more marked amongst men, who are 33.2% to express this view, as opposed to 21.7% of women (they are 28.9% to wish for a decrease vs. 17.9% of men stating so). This trend however should not conceal the major gap existing between the 18-34 y.o and the 35-44 y.o. brackets (who are more liberal) on the one hand, and the 45-54 y.o. and 55-69 y.o. brackets (relatively more conservative) on the other hand.

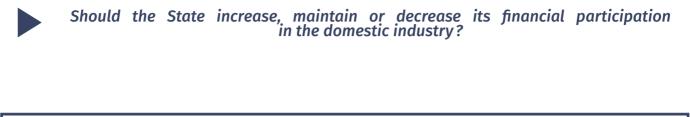


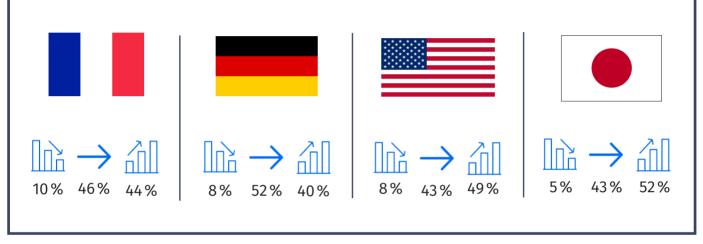
While the Americans in the older brackets are significantly more supportive of a reduction in foreign funds investments, they are less so than the French. With over a third of the respondents wishing to limit interventions from foreign stakeholders in their manufacturing industry, the French are once again the most protectionist.

This observation however should be nuanced since major gaps exist between age brackets, with the younger people significantly less hostile to this type of financing. It should be noted that they are still more opposed to it than Americans and Germans of the same age bracket.



A GENERAL TREND AGAINST REDUCING THE STATE'S PARTICIPATION IN FUNDING THE NATIONAL MANUFACTURING SECTOR

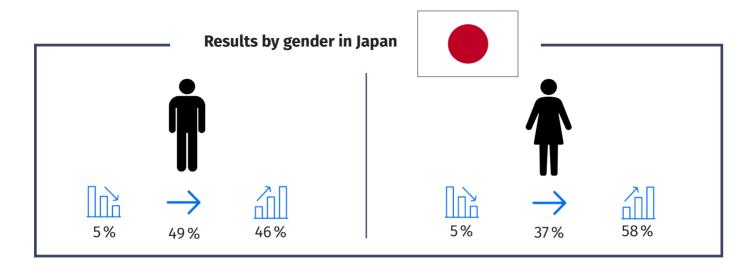




All countries present extremely high rates when it comes to expressing the wish that public investments in the national manufacturing sector should not be decreased (rates between 90% and 95%).

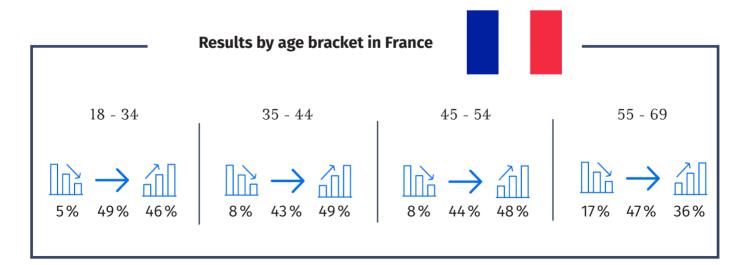
Two trends appear nonetheless: on the one hand, France and Germany for whom the status quo wins against a proposed reinforcement of such participation (particularly in Germany: +12% vs. +2% in France). On the other hand, Japan and the United States which are more favourable to increasing public funding in manufacturing.

Japan is the most favourable to a reinforcement, the only country where over half the population shares this opinion. This view is mostly popular amongst women. While this is also the case in other countries (46.6% in France vs. 41.6% of men; 44.2% in Germany vs. 36.5% of men), with the exception of the U.S.A. (46.6% vs. 51.4% of men), the rate of women supporting the reinforcement of public funding is nonetheless higher in Japan.



This Japanese trend is also prominent in the first three age brackets with rates between 52.8% and 59.5% for the 35-44 y.o., while it only gathers 44% of the opinions in the 55-69 y.o. bracket. The only other bracket sporting a rate over 50% in favour of increasing the State's contribution to manufacturing funding is the American 35-44 y.o. bracket (57.2%).

The will to decrease the State's involvement in financing the manufacturing sector remains extremely low in all the countries. This opinion is most popular in France, where one out of ten people express their wish to see State investments decrease in this sector of the economy. However this view is not evenly shared within the population, where a generational divide exists between the 55-69 y.o. bracket who are 17% to call for a withdrawal of public funding in the manufacturing sector, and the other brackets where the respondents are globally more in favour of a more interventionist State (rates between 5% and 8% in favour of a withdrawal).



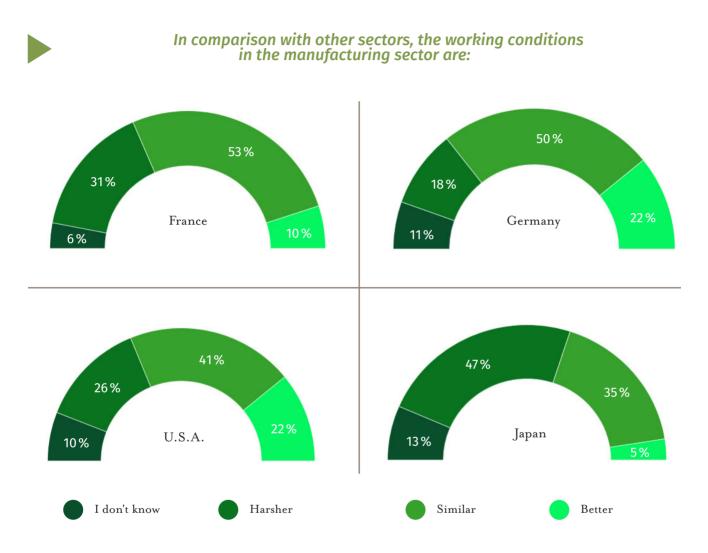




2. ATTRACTIVENESS AND PERCEPTION OF INDUSTRY

DESPITE DISPARITIES BETWEEN COUN-TRIES, ESPECIALLY IN THE JAPANESE CASE, MANUFACTURING REMAINS A GLOBALLY ATTRACTIVE INDUSTRY THAT AROUSES A KEEN INTEREST AMONG THE SURVEYED POPULATION

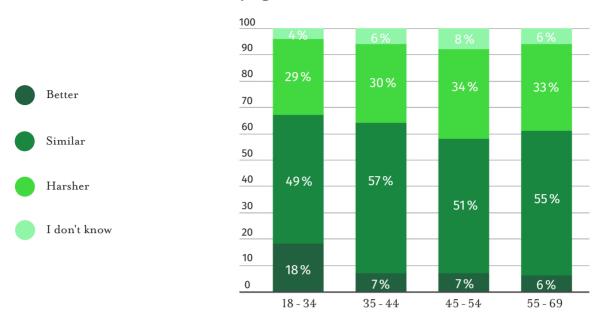
THE JAPANESE, AND TO A LESSER EXTENT THE FRENCH, ARE THE MOST CRITICAL TOWARDS HARSH WORKING CONDITIONS IN THE MANUFACTURING INDUSTRY, AN ISSUE THAT HIGHLIGHTS STRONG DISPARITIES AMONG COUNTRIES



There are major divergences regarding the issue of working conditions in the manufacturing industry. This issue is more expressed in two countries: France, where 31% of the respondents judge the conditions as "harsher" while 10% see them as "better", and Japan, the only country for which the highest rate in answers is for the one expressing arduousness in the industry (47%).

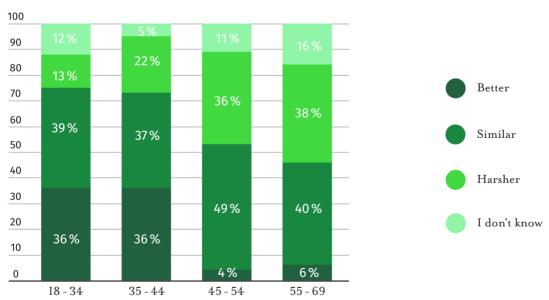
Japan is the country featuring the harshest perception of its manufacturing industry. The main trait of the country is the remarkable consistency in the results across categories of respondents, revealing that the negative perception of the Japanese manufacturing industry and its low attractiveness are shared by most of the population.

While rates are overall consistent among the French respondents, it should be noted that people from the 18-34 y.o. age bracket are highest in stating that working conditions are "better" in manufacturing (18% vs. 6% to 7% rates for other age brackets). This gap highlights a shift in perception of manufacturing in France, whose evolutions contribute to render it more attractive to the population.



Results by age bracket in France

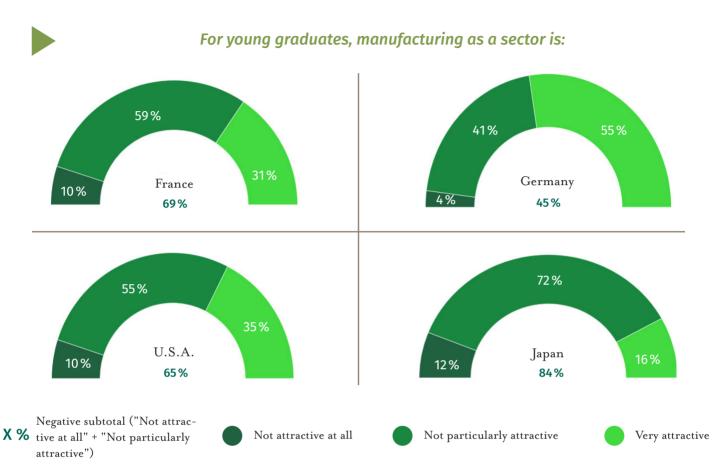
The gap between age brackets is particularly notable in the U.S.A., where an intergenerational rift appears on the matter between the first two brackets on the one hand, and the last two on the other hand. This disparity is only aggravated by the strong divergence between workers in the manufacturing industry and workers in other sectors, the first judging the conditions better (48.2%) as opposed to 14.9% for the others.



Results by age bracket in the U.S.A.

As for the Germans, they consider working conditions in their manufacturing industry the most positively. Indeed Germany is the only country where the population are higher in judging that these conditions are "better" than "harder" (22% vs. 18%). Half the surveyed people also evaluate that they are comparable to the conditions in other sectors, suggesting a better integration of manufacturing in the German professional landscape.

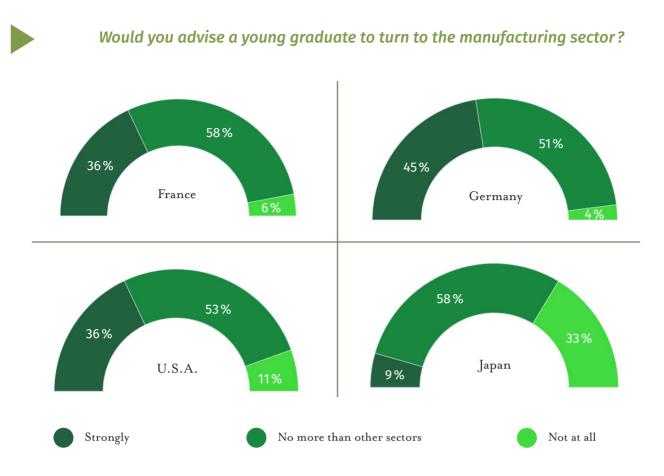
WITH JAPAN THE EXCEPTION, A CONSIDERABLE SHARE OF THE POPULATION STILL SEES MANUFACTURING AS HIGHLY ATTRACTIVE FOR YOUNG GRADUATES, PARTICULARLY IN GERMANY AND AMONGST THE YOUNGEST GENERATIONS IN THE U.S.A.



There are strong disparities in the perception of manufacturing's attractiveness for young graduates. Only the Germans predominantly see the sector as very attractive for those who are just entering the labour market (55%). This can be explained by the importance of manufacturing in the German economy, and by the social valorisation of apprenticeship-based training which is highly integrated in the educational system and provides solid pathways towards the labour market. Positive answers are more frequent in men than women (negative subtotal of 39.7% for men and 51.2% for women, a rate which nevertheless remains higher than other countries' average).

Although most of the countries do not perceive the manufacturing industry as attractive for young graduates with negative subtotals of 65% in the U.S.A., 69% in France and 84% in Japan, nearly a third of the French and the Americans still regard the industry as a providing good career opportunities.

While results are consistent for the French, American respondents are divided on the question of attractiveness of manufacturing for young graduates. The sector is deemed as "very attractive" mostly by men (43.7% vs. 25.7% of women) and workers from the manufacturing industry (68.7% vs. 26.1% of workers from other sectors). Moreover, the intergenerational gap shows again with great disparities between the young who see the sector as more attractive: 52.2% of the 18-34 y.o. and 55.3% of the 35-44 y.o., as opposed to rates between 9.7% and 16.6% for the other age brackets.



With the exception of Japan where 33% of the population would not recommend to a young graduate to look into manufacturing, between a third and half of those surveyed in other countries would do so. Thus the industry mostly retains some attractiveness and remains seen as a professional sector in which newer generations may have a career.

This particular Japanese trait is more prominent amongst women and in the younger generation, who express an even stronger distrust regarding the professional opportunities provided to young graduates. Indeed, 39.5% of women (vs. 25.8% of men, already a much higher figure than the other countries average) and 47.1% of the 18-34 y.o. bracket (rates between 24% and 30% in others) would "not at all" recommend a young graduate to look into the manufacturing sector.

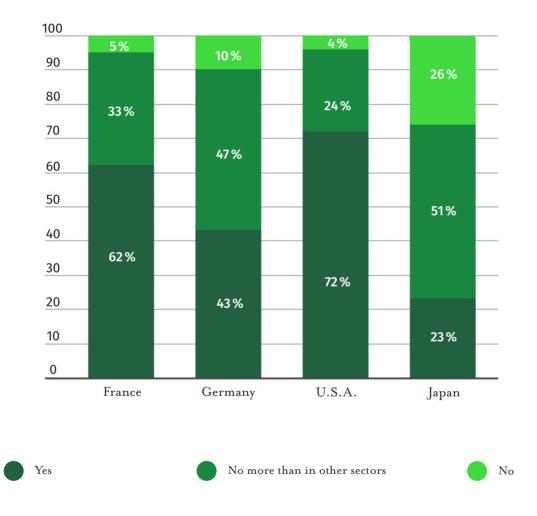
As stated before, results are quite similar for France and the U.S.A. even though the latter reveals more prominent disparities and trends. In America, the manufacturing industry is more recommended to young graduates by men (46.5% vs. 25,3% of women), workers from the manufacturing sector (65,9% vs. 28.4% of people in other activities) and the youngest age brackets (47.6% of the 18-34 y.o. and 53.2% of the 35-44 y.o., vs. figures between 17% and 23% for other age brackets).

With manufacturing carrying an overall stronger attractiveness in Germany and drawing particular attention from young people in the U.S.A., these two countries are part of a promising future trend as opposed to Japan, where the industry suffers from a negative image particularly strongly expressed among the 18-34 y.o. While France sits in-between both trends, a third of its population sees manufacturing as an attractive, promising industry for young graduates.

AS OPPOSED TO THE JAPANESE, THE AMERICAN AND FRENCH PEOPLE ARE THE MOST LIKELY TO EXPRESS THE POSSIBILITY FOR WOMEN TO HAVE A FULFILLING CAREER IN THE INDUSTRY

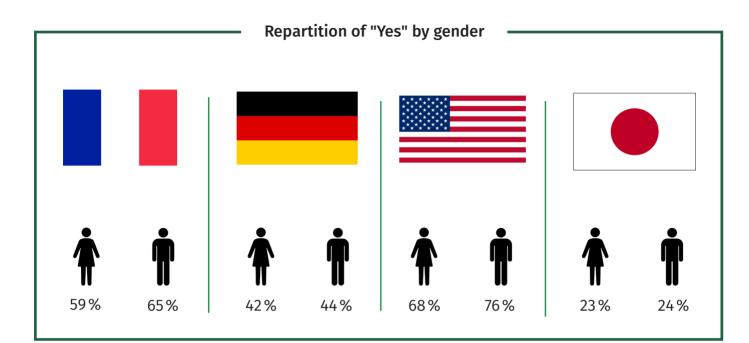


Would you say that women can find a fulfilling career in the manufacturing sector?



Important variations show in the answers to the question of whether women may have a blossoming career in manufacturing. While a majority of French (62%) and Americans (72%) think that the sector does offer favourable conditions to achieve an interesting professional life, the results show more contrast in Germany (43%), and very low rates in Japan (23%).

Study - Attractiveness and perception of industry

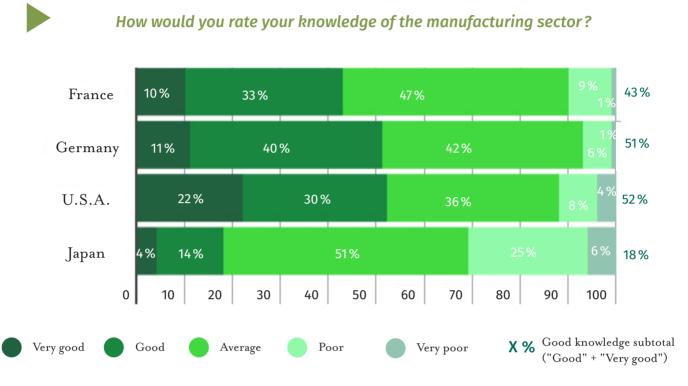


In all four countries, men systematically answer positively to the question of manufacturing's capacity to provide women with a fulfilling work environment. The variations in rate between men and women remain fairly low (between 1% in Japan and 8% in the U.S.A), meaning that both genders share the same perception.

Answers vary little among categories of respondents in France. The most significant differences appear in the American society, especially among manufacturing workers (82.9% vs. 69% for workers in other sectors) and the younger generations (73% of the 18-34 y.o, 78% of the 35-44 y.o., 69% of the 45-54 y.o., 68% of the 55-69 y.o.) who are highest in considering that the industry offers a suitable environment for the development of women's careers.

The Japanese confirm their severe vision of the national industry. This is the only place where more respondents answered "No" than considered that women can undertake a fulfilling career in the manufacturing sector. This negative perception particularly stands out in the younger generation : 32.3% of the 18-34 y.o. and 33% of the 35-44 y.o. as opposed to 17.2% of the 45-54 y.o. and 19.2% of the 55-69 y.o. (these figures are very much above the average in the other countries).

WITH JAPAN AN EXCEPTION, A LARGE PORTION OF THE SURVEYED POPULATION - ESPECIALLY AMONGST THE FRENCH AND AMERICAN MEN AND YOUNGER AGE BRACKETS - THINK THEY HAVE A GOOD KNOWLEDGE OF THEIR COUNTRY'S MANUFACTURING SECTOR



In most countries a large portion of the population declare to have good or very good knowledge of the manufacturing sector: 43% in France, 51% in Germany and 52% in the U.S.A. The Japanese demonstrate a more distant relationship with their industry with only 18% stating they have good knowledge of it.

In France as in Germany, the good knowledge subtotal is higher for men than women (48.1% vs. 38.5%). Nevertheless this figure is noticeably higher among French people in the 18-34 y.o. age bracket where 56.2% declare a good or very good knowledge of the manufacturing sector, as opposed to rates comprised between 35% and 40% in other brackets. There are not much variation within age categories in Germany, where manufacturing shows a better integration in the national economy and the public perception.

The Americans are the highest in stating their good knowledge of the industry (22% answer "very good knowledge"). These figures however must be contrasted with strong variations between men (good knowledge subtotal of 66.6%) and women (only 38.1%). And the same intergenerational gap appears once again between the 18-34 y.o. (66.5%) and 35-44 y.o. (71.7%) on the one hand, and the 45-54 y.o. (40.8%) and 55-69 y.o. (27.5%) on the other hand.

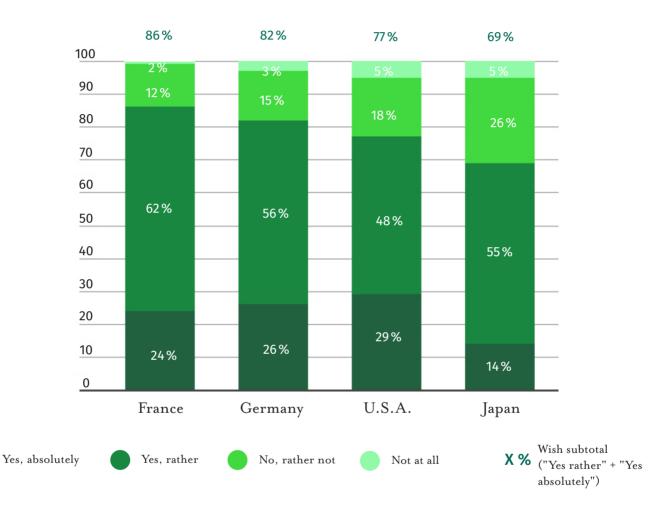
33% of the Japanese admit poor knowledge of their manufacturing industry. Figures are more consistent across categories than in the other nations, highlighting a collective distance with the sector. This is particularly visible in the small proportion of Japanese working in that sector who state a good knowledge: good knowledge subtotal of 36.2% vs. 74.8% in France, 81.1% in Germany and 87.9% in the U.S.A.

Study - Attractiveness and perception of industry

DESPITE DIFFERENCES BETWEEN COUNTRIES, A LARGE MAJORITY OF RESPONDENTS EXPRESS THEIR INTEREST IN THEIR COUNTRY'S MANUFACTURING SECTOR AND WISH TO KNOW MORE ABOUT IT



Do you wish you knew more about your country's industry?



Most respondents (between 69% and 86%) express their wish to find out more about their country's manufacturing sector.

This keen interest is the most prominent in France, especially among men with a wish subtotal of 91.7% vs. 79.6% for women (still a high figure). No significant differences appear across age brackets in France. Indeed all figures are comprised between 84% and 88%, highlighting a widely interested population.

In the U.S.A. the wish for better knowledge is more important for men (82.5% vs. 71% of women) and for the 18-34 y.o. and 35-44 y.o. age brackets.

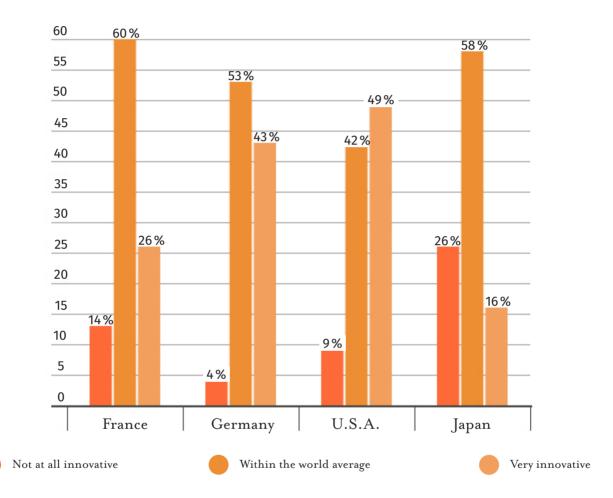


3. INDUSTRY AND INNOVATION

There are important variations in perception regarding the manufacturing sector's capacity to innovate and the effects of mechanisation on production lines

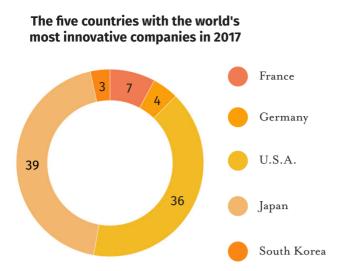
WHILE THE JAPANESE REVEAL POOR ESTIMATIONS OF THE INNOVATIVE POTENTIAL OF THEIR INDUSTRY DESPITE SUPERIOR PERFORMANCES COMPARED TO OTHER COUNTRIES, NEARLY HALF THE AMERICANS AND GERMANS, AND A QUARTER OF THE FRENCH CONSIDER THEIR INDUSTRY AS VERY INNOVATIVE

In terms of industrial innovations, do you consider your country to be:



Inhabitants of the studied countries present widely different perceptions of their manufacturing industry innovative capacities. Respondents from the United States (49%) and Germany (43%) judge in the largest numbers that their industry is more innovative than the world average. On the contrary, less than a fifth of the Japanese (16%) consider their industry have the ability to engineer new production solutions. France sits in a median position compared to other countries with 26% of its inhabitants judging manufacturing as "very innovative".

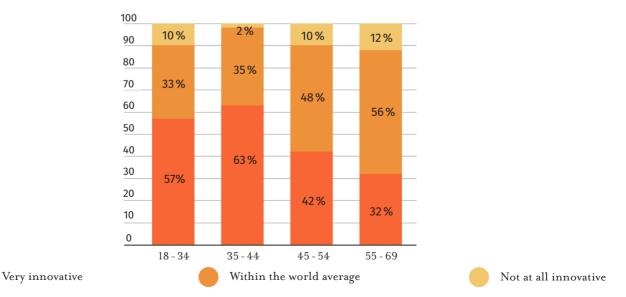
As shown by the following chart representing the countries hosting the highest numbers of innovative companies in the world, it appears that the Japanese show a very poor appreciation of their country's real capacity to innovate in manufacturing. Although Japan appears in the leading innovative countries, over a quarter of its inhabitants (26%) state that Japan is not innovative at all.



Compared to other countries, few Japanese agree with the term "very innovative" to describe their industry (with rates almost consistently under 20%). This negative image is common to all respondents, regardless of age, activity sector or gender (high consistency in results).

There is a significant difference in terms of innovation between Germany and the United States, although both countries share a similar perception of their industries. This vision of a very innovative sector is mostly supported by two categories: men (55.2% of men vs. 30.9% of women in Germany; 59.2% of men vs. 38% of women in the U.S.A.) and workers from the manufacturing industry (55.9% vs. 38.3% of workers from other sectors in Germany; 70.7% vs. 43.1% of workers from other sectors in the U.S.A.).

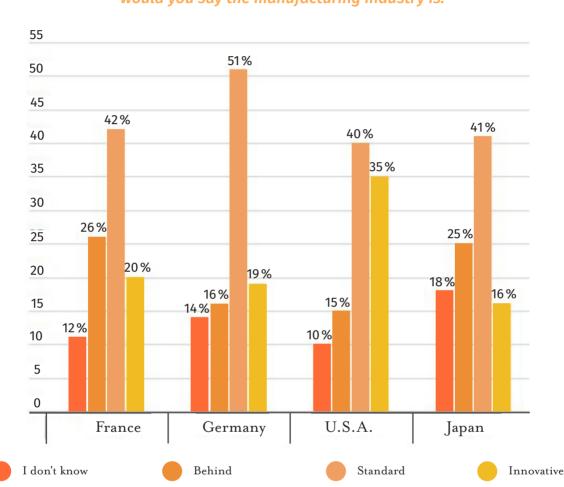
While variations across age brackets are relatively small in Germany (with a maximum difference of 10 points between the 18-34 y.o. and the 45-54 y.o. brackets), disparities run deep within the American society where the two younger age brackets who see their industry as very innovative, as opposed to the two others. Thanks to very high figures in the 18-34 y.o. and the 35-44 y.o. brackets, the United States are the only nation where less than half of those surveyed don't fall in the world average (43%).



Results by age bracket in the U.S.A.

Over a quarter (26%) of the French think of their national manufacturing industry as very innovative. This statement is even more popular amongst workers from the manufacturing sector (43.4% vs. 20.6% for workers from other sectors), and in the 18-34 y.o. age bracket (33.9%), although intergenerational disparities are less obvious than in the United States.

CONTRARY TO THE AMERICANS, THE FRENCH AND JAPANESE ARE MORE LIKELY TO SEE THEIR INDUSTRIES' MANAGERIAL PROCESSES AS LAGGING BEHIND IN COMPARISON WITH OTHER SECTORS

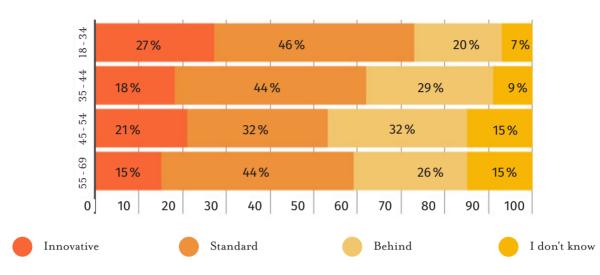


Regarding its managerial processes, would you say the manufacturing industry is:

Following a highly positive trend in the perception of their industry's innovative potential, Americans are highest in stating that their country's manufacturing sector displays innovative managerial processes (35%), and lowest in thinking that they lag behind other countries in that domain (15%). The difference in figures between these two options is much higher in the United States (+20%) than in Germany (+3%), France (-6%) and Japan (-9%).

As for managerial processes, this highly positive view of the American society is also more prominent amongst workers from the manufacturing sector (50.5% vs. 30.5% of workers from other sectors) and among the 18-34 y.o. and 35-44 y.o. age brackets.

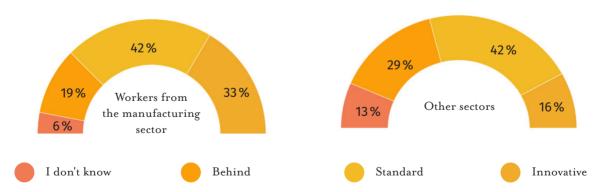
France is the country polled where managerial processes are perceived the least positively by its population (26%). This trend softens in the 18-34 y.o. age bracket compared to others brackets (20%). While this figure is higher than the rate in the German (12%) and American (9%) 18-34 y.o. brackets, it suggests the beginning of a steady change in French perception of a management increasingly integrating innovation in manufacturing.



Results by age bracket in France

Moreover, people who do not work in the manufacturing sector are the most likely to see its managerial practices as lacking. With 33% of workers from the industry considering it as innovative on that particular aspect, one can infer that the sector is indeed more innovative in management than it appears.

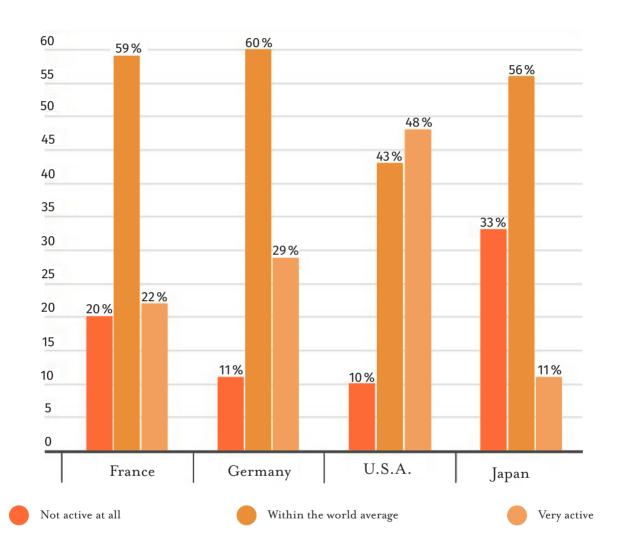
Results by professional activity in France



Germany is the only country where over half the respondents (51%) see their manufacturing industry's managerial processes as standard. This characteristic feat emphasises, from a managerial point of view, the advanced uniformisation of manufacturing practices with those of other sectors, revealing its great integration in the German economic model.

The Japanese are 25% to state that their industry lags behind in terms of managerial processes, confirming a very poor perception of the actual levels of innovation in the country's manufacturing sector.

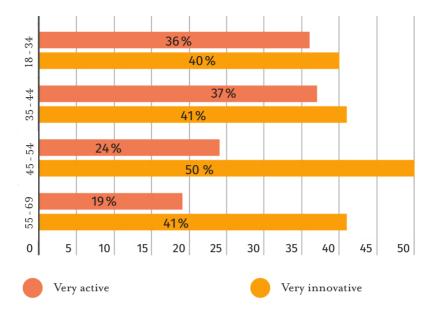
WHILE 43% OF THE GERMANS SEE THEIR COUNTRY AS "VERY INNOVATIVE" IN MANUFACTU-RING, ONLY 29% CONSIDER IT IS "VERY ACTIVE" IN SUPPORTING INNOVATION



With regards to supporting innovation, would you say your country is:

In all countries except Germany, the answers to the question of supporting innovation generally mirror previous answers about perceived innovative capacities of the manufacturing industry.

Indeed in Germany, even though a large portion of the respondents consider their country as "very innovative" in the manufacturing sector (43%), only 29% see it as "very active" in supporting innovation. The difference suggests that R&D spendings are, according to the Germans, mostly privately initiated. This opinion is most popular amongst men, and within the 45-54 y.o. and 55-69 y.o. age brackets.

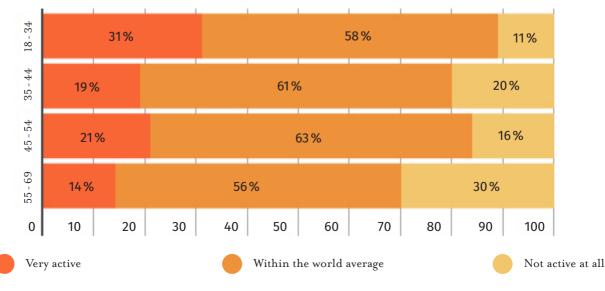


Repartition by age in Germany

The United States enjoy a positive perception of their support to innovation (with 48% of Americans judging their country as "very active" in this domain), with the strongest expression amongst workers from the industry (74.8% vs. 40.7% of workers from other sectors) and the two younger age brackets. The 18-34 y.o. (59,6%) and 35-44 y.o. (66,4%) are indeed more assertive than the 45-54 y.o. (39%) and the 55-69 y.o. (23.5%) in stating that their country is a vigorous supporter of innovation.

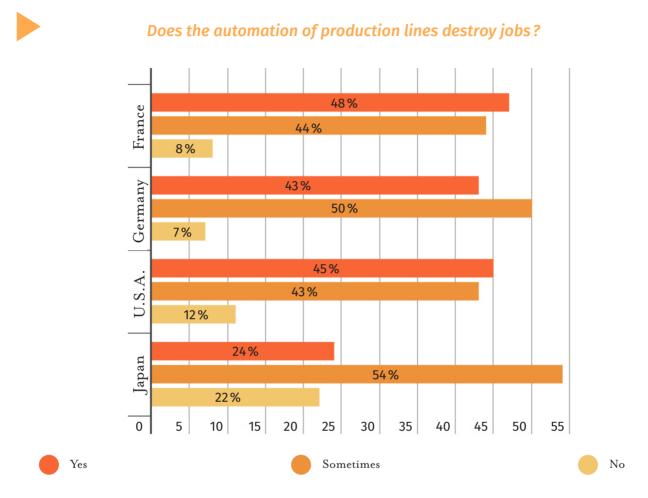
Again these results clash with those gathered among the Japanese population, where a third of the respondents (33%) think that their country is not active at all in supporting innovation. While there are very small variations between categories, it is worth noticing that the 18-34 y.o. are the strictest in expressing this opinion.

In France, the 18-34 y.o. bracket is the most likely to see the country as active in supporting innovation.



Repartition of the results by age bracket in France

APART FROM THE JAPANESE, A LARGE PART OF THE POPULATION CONSIDER THAT AUTOMATION IN MANUFACTURING HAS A NEGATIVE IMPACT ON EMPLOYMENT



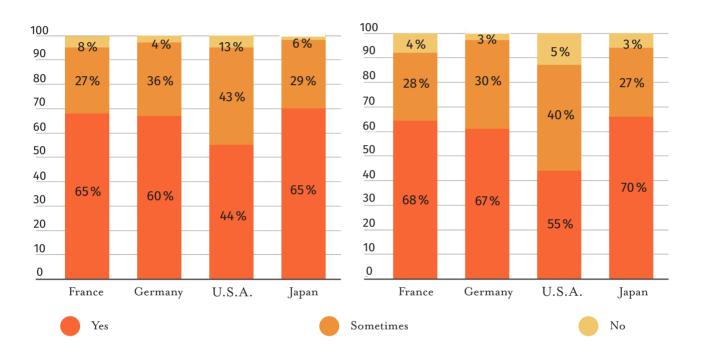
Apart from Japan, results are similar across countries when it comes to the impact of automation on employment. A large part of those surveyed (43% to 48%) think that growing automation in the manufacturing industry has a negative impact on employment.

This opinion is most popular in France with 65% of the 18-34 y.o. judging that automation is cause for the destruction of jobs in the industry, as opposed to rates of nearly 40% in other age brackets. This is a French characteristic since in Germany and in the United States, the 35-44 y.o. bracket is the most likely to express the idea of a negative impact from automation (respectively 52% and 64%). Furthermore, this opinion is more often expressed by French workers from the manufacturing industry than anywhere else, with 60% thinking that automation destroys jobs vs. 44% in Germany, 51% in the U.S.A. and 24% in Japan (where 22% of those surveyed think the opposite).

The overall more positive perception of manufacturing automation in Japan is linked to a double specificity in their demographics: a steep decline in population (from 127 million inhabitants in 2015 to 88 million in 2065, according to the *National Institute of Population and Security Research*, an esteemed drop of 39 million in 50 years) on the one hand, and a very strict, cautious immigration policy on the other hand. Automating production lines is therefore seen as a means to counterbalance the decrease and aging of the active population while remaining competitive on an international level.

THE AMERICANS ARE THE LEAST LIKELY TO ACKNOWLEDGE THE BENEFITS OF AUTOMATION WHILE THE JAPANESE ARE THE MOST LIKELY TO HIGHLIGHT ITS POSITIVE IMPACTS DESPITE THE NEGATIVE PERCEPTION OF THEIR INDUSTRY'S INNOVATIVE POTENTIAL

Does the automation of production lines allow... an increase in productivity? ... a decrease of penibility?



Decrease of penibility

Increased of productivity

France and Germany share very similar opinions about whether automation increases productivity and decreases penibility. The 18-34 y.o. lag behind compared to other brackets when it comes to acknowledging the positive effects of automation - and more so for the French than the Germans.

Although the Japanese generally perceive innovation in their manufacturing sector negatively, they systematically highlight the positive sides of automation. There are few variations across age brackets, gender or activity sectors in the respondents, thus showing a consensus on the matter and the profound acceptance of automation in Japan's society.

On the contrary, and despite high figures, the benefits of automation are least appreciated by the Americans. This trend is caused in particular by a poor evaluation of automation by American women. They are 48.1% to acknowledge the increase in productivity vs. 61.2% of men; 37.3% see improvement in working conditions vs. 49.7% of men.

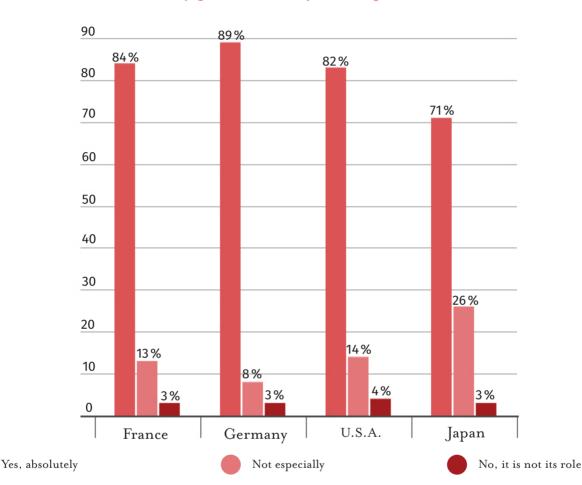


4. INDUSTRY AND THE CHALLENGES OF ITS TIME

Manufacturing is predominantly perceived as a sector mindful of the issues of its time and turned to future

Study - Industry and the challenges of its time

THE GREAT MAJORITY OF RESPONDENTS CONSIDER THAT MANUFACTURING HAS A ROLE TO PLAY IN ENVIRONMENTAL PROTECTION - AN OPINION GENERALLY LESS POPULAR AMONG THE 18-34 Y.O.



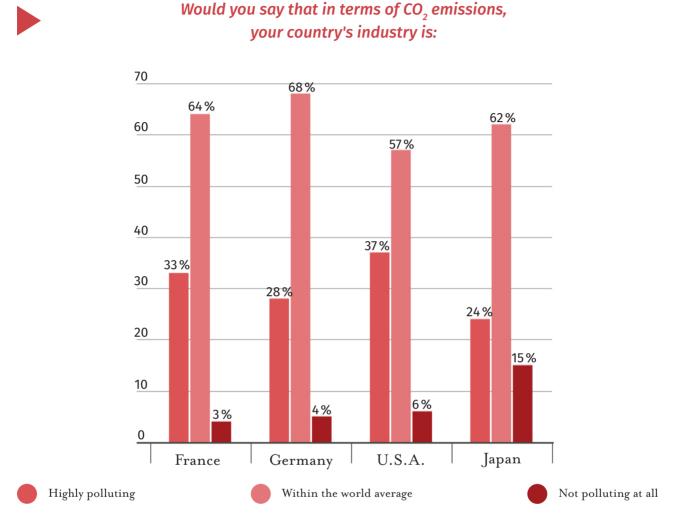
Should industry get involved in protecting the environment?

The necessity for the manufacturing sector to take an active part in protecting the environment is a concept widely shared across countries where between 71% and 89% of those surveyed stating as imperative that it takes up the challenge.

This opinion is the least popular in Japan with 29% of the Japanese considering that their industry is not necessarily - or even at all - destined to undertake such environmental initiatives. The 18-34 y.o. are the most likely to question this involvement. They are only 56.6% to think manufacturing should take action (rates comprised between 67% and 82% for other age brackets).

With higher figures in favour of manufacturing playing a role in environment protection, this trend is also present in the other countries: the French 18-34 y.o. are 73.1% in favour of involving the industry in protecting the environment (87% to 91% in other age brackets), the Americans 77.8% (80% to 90% in other age brackets) and the Germans 81.9% (90% to 96% in other age brackets).

BEYOND A GENERAL TENDENCY TO RANK THEIR NATIONAL MANUFACTURING SECTOR AS WITHIN THE WORLD AVERAGE ON CO₂ EMISSIONS, BETWEEN A QUARTER AND A THIRD OF RESPONDENTS JUDGE IT AS HIGHLY POLLUTING.

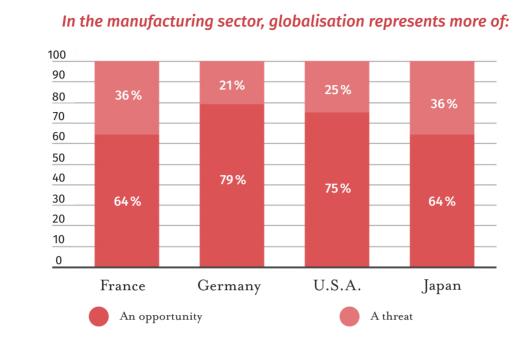


While the majority of surveyed people think that their national industry stands in the world average in terms of CO_2 production (between 57% and 68%), between a quarter and a third still consider it is highly polluting.

The Japanese are the least likely to qualify their manufacturing industry as polluting. This particular trait partially explains why they are less prone to estimate that it is imperative for it to act to preserve the environment (71% vs. figures between 82% and 89% in other countries).

In the meantime, although the 18-34 y.o. systematically stand out as the least in favour of manufacturing launching environment protection measures, they always rank first in calling "highly polluting" their national industry: 34.7% in Japan (12% to 27% in other age brackets), 36.3% in Germany (19% to 28% in other age brackets), 48.3% in the United States (28% to 39% in other age brackets) and 48.4% in France (25% to 28% in other age brackets).

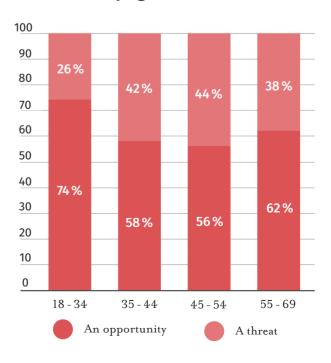
GLOBALISATION IS MOSTLY SEEN AS AN OPPORTUNITY FOR THE MANUFACTURING SECTOR, PARTICULARLY AMONG INDUSTRY WORKERS



In all countries, globalisation is seen by the vast majority of respondents as an opportunity in the manufacturing sector (rates between 64% and 79%). Two groups appear nonetheless: Germany and the U.S.A. form the first one, where globalisation is seen as a threat for about a quarter of the respondents. France and Japan are the second group, where this idea is shared by a third of the population.

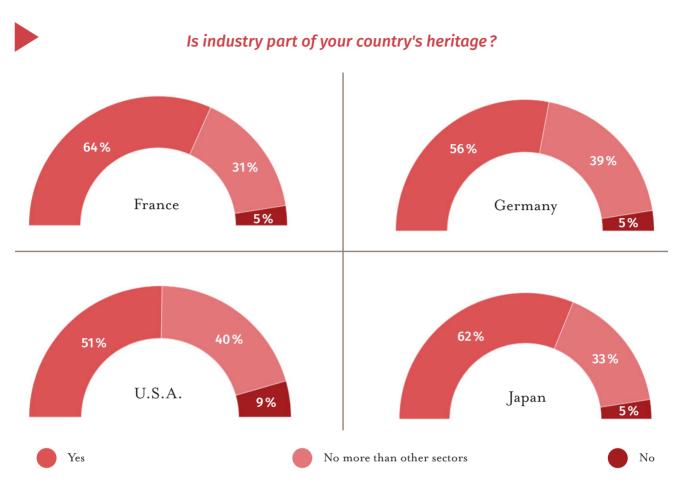
In Japan, answers to the question asked above are very consistent across categories, unlike in France where the protectionist trait is less prominent among the 18-34 y.o. than the older age brackets. The same goes in the U.S.A. where globalisation is perceived more as an opportunity within the younger generations, generally more liberal: 18-34 y.o. (78.8%), 35-44 y.o. (89.8%), 45-54 y.o. (61.2%) and 55-69 y.o. (70.3%). Only the Germans 18-34 y.o. are behind their elders on that matter (75% vs. rates between 79% and 86%).

Furthermore, it is worth noting that in every country, workers from the manufacturing sector consider in higher number that globalisation is an opportunity for their industry, compared to their compatriots working in other sectors: +2%in Japan, +5% in Germany, +12% an the U.S.A, +14% in France.



Results by age bracket in France

THE VAST MAJORITY OF RESPONDENTS CONSIDERS INDUSTRY AS AN IMPORTANT PART OF THE NATIONAL HERITAGE, PARTICULARLY IN FRANCE AND JAPAN



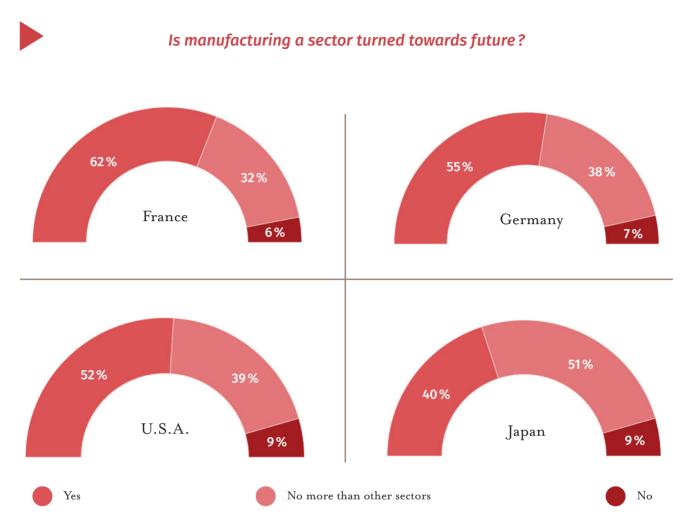
A general trend in all countries is to consider that manufacturing is part of the national heritage (between 51% and 64%). This opinion is most popular in France (64%) and Japan (62%), which explains why the French and Japanese tend to see globalisation as more of a threat for manufacturing.

Results gathered in Japan remain very consistent, and no significant trend appears in France across gender and age brackets. However the French manufacturing workers are more likely to consider their industry as part of the country's heritage (72.9% vs. 60.4% of workers from other sectors).

The feeling of attachment, and almost patriotic pride that dominates among manufacturing workers is also notable in Germany (66.3% vs. 52.6% of workers from other sectors) and in the United States (75.9% vs. 44.6% of workers from other sectors).

There is another trend in these countries, which is a disparity between gender more prominent than in France, with men considering in larger numbers that the industry is part of the national heritage: 65.7% of men vs. 47% of women in Germany; 62.7% of men vs. 39% of women in the U.S.A. In America this opinion is also more popular among the 18-34 y.o. (55.8%) and the 35-44 y.o. (63.5%) than the 45-54 y.o. (43.7%) and the 55-69 y.o. (40.4%).

APART FROM JAPAN, THE MAJORITY OF THE RESPONDENTS SEE MANUFACTURING AS A SECTOR TURNED TOWARDS THE FUTURE, PARTICULARLY IN FRANCE.



With Japan an exception, over half of the respondents in each country think that the manufacturing sector is an industry turned towards the future. Ahead of the Americans (52%) and the Germans (55%), the French are the most confident in the industry's durability and its capacity to undertake tomorrow's challenges (62%). And this faith in future prospects for the French industry is consistently expressed across the population as shown by the small variations between age brackets (between 60.3% for the 18-34 y.o. and 64.4% for the 45-54 y.o) and gender (60.7% of women, 63.1% of men).

In all countries, workers from the manufacturing sector tend to express the idea that their industry is focused on the future in higher numbers: 73.6% in France (vs. 58% in other sectors), 71.8% in the U.S.A. (vs. 47.5% in other sectors) and 66.2% in Germany (vs. 50.1% in other sectors).

Study - Industry and the challenges of its time

Only 42.9% of the Japanese working in the industry share this optimism, as opposed to 39.6% of their compatriots working in other sectors. The variation between these two categories is smaller and the rate of "Yes" significantly lower, revealing that the Japanese are highly suspicious of their industry's approach to future. This could be foreseen in the way the manufacturing industry's capacity to innovate is perceived very poorly by the Japanese.

The same intergenerational gap is still noted in the United States between the two younger age brackets who answered "Yes" (60.8% of the 18-34 y.o. and 62.3% of the 35-44 y.o.) and the others (between 40% and 43%).

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