Applications of the Stereotype Content Model across countries and cultures

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Abstract

For this literature review I delve into research on the Stereotype Content Model (SCM). According to SCM, we perceive social groups in terms of warmth and competence. My focus lies on the following question: How has this model been applied across different countries and cultures? I identified two distinct streams of research. Some researchers applied the SCM to populations outside of the US to focus on general relationships. They found that income inequality and inner-state conflict affect stereotype contents across countries. Other researchers addressed culturally specific issues, such as stereotypes towards immigrants, different genders and sexual orientations, politicians or robots. After presenting these studies, I address limitations of both the literature and my review. Due to methodological issues (e.g., concerning samples and formulations of questions) we should remain skeptical about some of the findings. However, I argue that the SCM provides a useful framework for studying stereotypes across cultures. Many researchers applied the SCM in creative and fruitful ways, a path that I would encourage future research to follow.

A few questions to begin with

Would you prefer an adult-looking robot to do your taxes, but a childlike robot to play cards with? Do you respect rich people, but you like elders a bit better? Would you rather engage in a conversation with a fellow academic than with a homeless person? If you can answer these questions with yes (after putting social desirability and confusion about the first one aside), your answers are in line with findings concerning the Stereotype Content Model (SCM). The SCM is the most widely used framework for investigating the nature and consequences of stereotyping (Halkias & Diamantopolous, 2020). In this review, I will address the following question: how has the Stereotype content Model been applied within and across different countries and cultures? This is a relevant question, as stereotypes might differ fundamentally between countries. Also, research across nations can address overarching relationships, for example between stereotypes and economic factors. Besides that, cross-cultural research is an important way to overcome the traditionally Eurocentric perspective of western psychology and to find out whether theories and models are also applicable in non-western countries. No reviews on this specific topic have been published yet, even though the SCM has been studied in several cultures. Thus, I will present a selection of studies to address my research question. Towards the end I will discuss limitations and problems of both the included studies and this review, before offering suggestions for future research. But first things first. Let's start with some definitions.

The Stereotype content model – a model of what??

Rosenthal and Overstreet (2016) define stereotyping as the cognitive process of "associating a characteristic with a group, but it can also involve, lead to, or serve to justify an affective reaction toward people from other groups" (Rosenthal & Overstreet, 2016). The APA dictionary of psychology defines stereotypes as sets of "cognitive generalizations (e.g., beliefs, expectations) about the qualities and characteristics of the members of a group or social category" (American Psychological Association, n.d.).

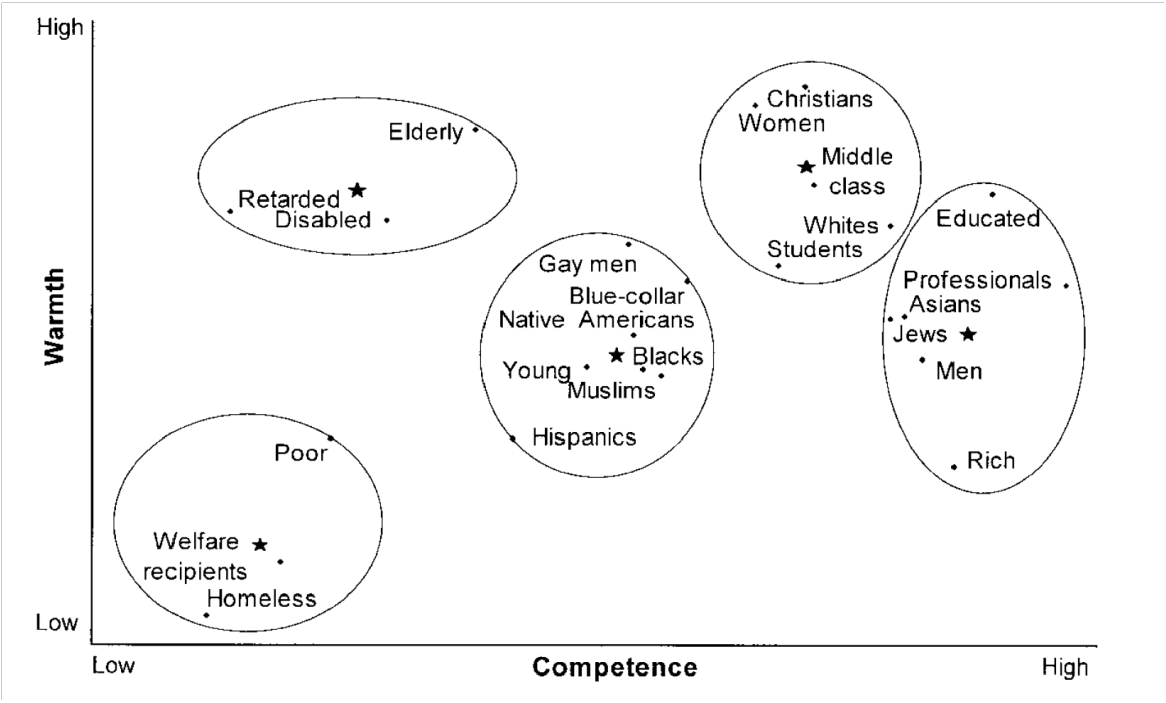
The SCM, first proposed by Fiske and colleagues (2002), captures the content of stereotypes using two fundamental dimensions: warmth and competence[1] (Fiske et al., 2002). Warmth describes how we perceive the other's intent, competence how we perceive the other's capabilities (Fiske et al., 2002). In consequence, warmth basically implies how much

[1] Researchers already demonstrated in earlier decades that these two dimensions play a crucial role in how we perceive other individuals (e.g., Asch, 1946; Wojciszke et al., 1994).

we like members of a social group, whereas competence implies how much we respect them (Fiske et al., 2002; Fiske et al., 2007). Also, warmth affects whether we perceive a group as competitive (low warmth) or non-competitive (high warmth), whereas competence is related to the status we ascribe to groups. Low competence groups are often perceived as subordinate, while high-competence groups tend to be associated with a higher status (Fiske et al., 2002). Throughout the text, I will use a combination of two letters to describe positioning along these dimensions. The first letter describes the magnitude as low (L), middle (M) or high (H), the second the dimension warmth (W) or competence (C). For example, LW stands for low warmth, HC for high competence.

In terms of stereotype contents, we can locate social groups along the two dimensions of warmth and competence. For a graphic depiction, we simply draw a map in which we place social groups. This „map" is basically two-dimensional space. In most studies, the y-axis represents perceived warmth, whereas the x-axis represents perceived competence. You can see such a map in Figure 1, published in Fiske et al. (2002). In the corresponding study, American students identified 25 social groups within the US and rated them in terms of warmth and competence. The students disliked and disrespected some of the groups (e.g., welfare recipients; LW/LC), but liked and respected others (e.g., Christians; HW/HC).

Figure 1.
Ratings of 25 in- and out-groups by American students (Fiske et al., 2002).



However, the authors suggest that positive perceptions on one dimension do not contradict prejudice, but instead are often associated with low ratings on the other dimension (Fiske et al., 2002). For example, the participants perceived elders as a subordinate, noncompetitive group (HW/LC). In contrast, the students characterized Asians as a high-status, competitive group (LW/HC) (Fiske et al., 2002). As we see in figure 1, groups tend to form loose clusters, for example a LW/LC cluster including homeless and poor people as well as welfare recipients.

For the questionnaire, the authors (Fiske et al., 2002) used the formulation "As viewed by society, how … are members of this group?". The blank space was filled with attributes considered to be associated with warmth (friendly, well-intentioned, trustworthy, warm, goodnatured, sincere) or competence (competent, confident, capable, efficient, intelligent, skillful), which results in 6 items for each dimension (Fiske et al., 2002).
The groups I used as examples so far only reflect stereotypes within the US. In the following section I will present studies about stereotypes in other countries.

Categorization of social groups in non-US countries

Cuddy and colleagues (2009) published the first study that investigated the SCM in non-US countries. The authors conducted surveys in seven European and three Asian countries to test whether the SCM can serve as a measure across cultures (Cuddy et al., 2009). Participants in European countries rated how citizens of the European community view competence, warmth, status and competition of 15 European countries. Figure 3 (appendix) shows how these countries arrayed and clustered along the dimensions of warmth and competence. Participants in Asian countries (Hong Kong, Japan, South Korea) completed the same survey as the participants in Fiske et al. (2002). If you have a look at the results in a Hong-Kong based population (appendix, figure 4) you might notice the lack of a HW/HC cluster. Interestingly, none of the Asian samples displayed a cluster of HW / HC. The difference to a US sample becomes clear when compared to the clusters displayed in figure 1, where participants rated some groups highly positive on both dimensions. Nonetheless, the prevalence of low ratings might imply that out-groups (e.g., Pakistani and janitors in the Hong-Kong sample) are derogated even in absence of clear group favoritism (Cuddy et al., 2009).

Durante et al. (2013) argue that ambivalent stereotypes (high on one dimension but low on the other) serve to justify and maintain social inequalities. Thus, they predict that ambivalent stereotypes are more prevalent in countries with high income inequalities. To test

this claim they administered surveys in 37 countries across Europe, North and South America, Asia, Oceania and Africa and tested the statistical relationship between stereotype ambivalence and income inequality. In line with their hypothesis, they found higher prevalence of ambivalent stereotypes in countries with higher economic inequality (see figure 5 in the appendix).

Durante and colleagues (2017) assessed whether stereotype ambivalence is associated with inner-state conflict and peace (based on the Global Peace Index). The authors hypothesize that high-conflict nations (e.g., Pakistan) display non-ambivalent stereotypes (LW/LC, HW/HC) to clearly distinguish friendly and potentially hostile groups. They further assume that highly peaceful countries (e.g., Denmark) do not need ambivalent stereotypes, as groups may share a common identity. Thus, the authors predict that intermediate-conflict countries display strongest stereotype ambivalence. Durante et al. (2017) included 49 samples from 38 countries. The results support the authors' hypotheses, as the relationship between conflict and stereotype ambivalence is approximately U-shaped (see figure 6). Stereotype ambivalence is lowest in high-conflict and high-peace countries. However, not all countries are situated in that trend. India for example is a medium-conflict nation with low stereotype ambivalence. Nonetheless, it is interesting to see stereotype maps with extremely low ambivalence from countries like Pakistan (see appendix, figure 7).

In further studies, researchers used the SCM framework to investigate group stereotypes of single non-US countries, such as Romania (Stanciu et al., 2017), Russia (Grigoryev et al., 2019) and China (Liang et al., 2022).

Stanciu et al. (2017) decided to use samples from four distinct regions in Romania that represent different stages of economic development. The authors aimed to assess withinculture variation in stereotype contents. 15 groups were identified and rated in terms of warmth and confidence. Stereotype ambivalence was highest in Bucharest, the region with highest economic development, and lowest in Tigru-Mures, a region of low economic development and high prevalence of ethnic minorities. The results suggest that stereotype content and ambivalence vary within cultures and nations if regions differ in stage of economic development and in ethnical diversity.

Grigoryew and colleagues (2019) investigated stereotype contents and ambivalence in Russia. They predicted that participants would rate ethnic minorities and outgroups low on both dimensions, but "ethnic" (and mainly eastern orthodox) Russians high on both dimensions. The authors claim that this effect should be strong in Russia, due to its large cultural and spatial distances and fundamental differences between native and religious

groups. The 60 largest ethnic groups in Russia were rated by ethnic Russian participants. The results support the authors' hypotheses. The groups with the lowest ratings on both dimensions (e.g., Roma, Chechens, Dargins) are ethnic minorities and outgroups. In contrast, ethnic Russians and Belarusians received very high ratings on both dimensions.

Liang and colleagues (2022) investigated stereotypes and emotions towards five nations (China, Japan, India, Tanzania, US) amongst Chinese students. China received by far the highest ratings on both dimensions, indicating strong in-group favoritism. The US and Japan – economically highly developed nations – scored low on warmth but high in competence. Based on figure 8 (appendix), the authors hypothesize that envy should be the dominant emotion towards the US and Japan. While this applied to the US, the participants primarily expressed contempt toward Japan and Japanese people. The authors explain this emotion by historical factors: "Although Chinese people recognize the development and strength of Japan, historical factors tilt negatively their evaluations of and feelings toward Japan and the Japanese" (Liang et al., 2022). These findings demonstrate that stereotypic emotions are only partially explained by the dimensions of warmth and competence. Other (e.g., historical) factors also can influence how we perceive groups.

Specific applications

So far, we have looked at studies that investigated in a rather broad scope how social groups are perceived in terms of warmth and competence in different countries. However, in recent years the SCM has also been applied to more specific research questions. The following studies extend the use of this model to investigate specific issues that are prevalent in certain countries and cultures.

Germany: Immigrants and asylum seekers

Kotzur et al. (2019a) investigated stereotypes towards different immigrant subgroups in Germany. The groups included different countries of origin and motives of migration. As reference groups, elderly and homeless people were added to the survey. The participants rated all immigrant subgroups lower in warmth and competence than elderly people, but more competent than homeless people. The motif of immigration predicted perceived warmth. Participants rated war refugees significantly higher on warmth than economic refugees. Region or country of origin also affected perceived warmth and competence. Of all immigrant subgroups defined by origin, North African immigrants were rated lowest on both dimensions, whereas Syrian immigrants were rated highest on both dimensions.

In another publication, Kotzur et al. (2019b) conducted an experiment to investigate whether a single intervention could change stereotypes towards asylum seekers. Participants were assigned to one of two conditions, in which they either met a German- ("Frank") or Pakistanborn student ("Abdelrahim") with whom they engaged in a structured conversation. After this intervention, participants rated asylum seekers and ingroup-members (Germans) in terms of warmth and competence. Participants who met the Pakistan-born student rated asylum-seekers higher in warmth than those participants who met the German-born student. Differences in perceived competence did not reach statistical significance.

Sweden: Gender and sexual orientation.

Sendén et al. (2019) conducted a study to investigate whether gender stereotypes are subject to change when equality between genders increases. Participants were assigned to one of six conditions in which they imagined and rated either a man or woman in the past (1950), present (2019) or future (2090). Women in the present and future were rated higher in competence than women in 1950. The content of male stereotypes did not change, despite a higher engagement of men in non-traditional communal activities. Perceived warmth / competence of present and future stereotypes did not differ. The authors argue that participants overestimated the current state of gender equality in Sweden, making future progress less likely.

In another study conducted in Sweden, Klysing and colleagues (2021), asked participants to rate bi-/ hetero- and homosexual men and women. The authors found that stereotypes of women and men are ambivalent: participants perceived women as warmer but less competent, men on the other hand as less warm but more competent. When the researchers specified sexual orientation, these ratings became more diverse. Participants rated heterosexual women and men very similarly to the genders without specified sexual orientation. In line with the "gender inversion hypothesis" (Kyte & Deaux, 1987) the authors found that stereotype contents of homosexual women resembled those of heterosexual men, whereas stereotypes of homosexual men resemble those of heterosexual women. Stereotypes of bisexual women and men were situated between stereotypes of homo- and heterosexuals on both dimensions.

Latin America: Corruption in politics

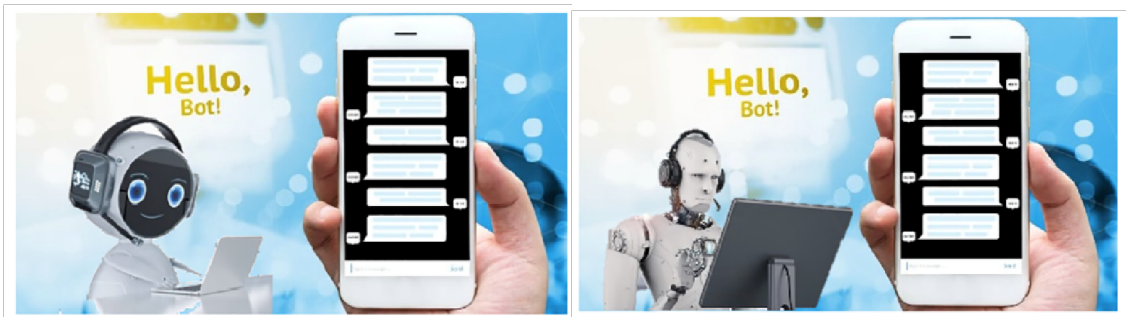
Ramos and colleagues (2017) examined stereotypes of politicians in nine Latin American countries. The authors predicted that stereotype content of politicians would

impact perceived justice. Their study was performed in 2015, a time in which corruption scandals shaped the political context in many Latin American countries. The authors recruited participants from Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru and Uruguay. The authors divide the warmth dimension into two facets, morality and sociability. They define morality as perceived correctness, indicated by trustworthiness and sincerity. Sociability refers to cooperation and social connection. Most participants rated politicians low on morality, which in turn was associated with disbelief in societal justice. Perceived sociability and competence of politicians did not affect perceived justice.

China: Perception of robots.

Liu and colleagues (2021) investigated how stereotype contents of robots predict the intention to use service robots. They presented students with pictures of robots (see figure 2 for examples) and asked them to rate the robots in terms of competence and warmth. Participants perceived Robots with childlike features as warmer than adult-like robots and adult-like robots as more competent than childlike robots. For hedonic purposes participants showed higher intention to use a childlike (warm) robot. For utilitarian purposes participants showed higher intention to use an adult-like (competent) robot. Trust in technology had a mediating effect between perception of robots and intention to use them.

Figure 2.
Examples of robots with childlike (left) and adult-like (right) appearance, used as stimuli in Liu et al. (2021).



Limitations of studies

I would like to mention several limitations of the studies included in this review. First of all, the samples are not representative for the general population of each country. Most samples consisted entirely of undergraduate students. Especially in countries with high inequality we can assume that university students are members of socially privileged groups and share a certain socioeconomic and ethnical background. The low mean ages of most

samples can affect ratings of groups like elders. And as Stanciu and colleagues (2017) showed, stereotype contents vary within cultures and countries, especially if regions differ in cultural aspects and economic development. Only few researchers sampled from a general population (e.g., Ramos et al., 2017, Sendén et al., 2019; Klysing et al., 2021) or explicitly investigated interregional differences within countries (Stanciu et al., 2017). But for all studies it is impossible to generalize the findings to the overall population.

I find it interesting that most studies asked their participants how the *general population* would perceive a certain group (e.g., "As viewed by society, how … are members of this group?" in Fiske et al., 2002). I assume that this an attempt to overcome the issues of biased sampling and social desirability. But it introduces another problem: What exactly is expressed by the answer? The participants' stereotypes, the societies' stereotypes, the stereotype-based assumptions participants have of what they consider the society's stereotypes? Can we disentangle these perceptions? I think it would be easier to interpret the findings if the questions were directed towards the participants *own* stereotypes. I can also imagine that the stereotypes expressed in this way are strongly influenced by public and medial discourses, which might lead to more extreme perceptions of stereotype contents. However, it might depend on the research question whether we are primarily interested in individuals' stereotypes or the stereotypes prevalent in a society, and the used method might better account for the latter.

Concerning the SCM itself, we can question how well it actually captures stereotype contents. I consider its simplicity a strength. The model is parsimonious and easy to implement and interpret. This makes diverse applications and comparisons much easier, even across cultures. However, are there more facets of stereotypes to be considered? For example, Liu and colleagues (2021) divide the warmth dimension into two subdimensions. This leads to the issue, that studies used different operationalizations of these fundamental dimensions. Sendén and colleagues (2019) interpret warmth as femininity and competence as masculinity. It is hard to capture the differences between operationalizations, as the asked questions often differ in subtle ways. Questionnaires were translated for use in other countries, which again i reduces the comparability of results across studies and countries.

At last, I want to mention that most studies in this review were not pre-registered. With few exceptions, findings supported the hypotheses of the authors, even those that did not seem intuitive to me. Also, many of the studies (e.g., Fiske et al., 2002; Cuddy et al., 2009, Durante et al., 2013, Durante et al., 2017) have been conducted by the same research group. I cannot

recreate whether problematic research practices were applied in any of the studies. Nonetheless, I see the findings in general with a mild skepticism.

Limitations of review

This review has some limitations as well. First of all, the overall quality of presented findings obviously depends on the quality of the presented studies, an issue discussed above. But besides that, I want to mention explicitly that I did not conduct a systematic literature search. I based the decision which study should be included on perceived relevance and how interesting I found the research question. Besides that, I tried to display a variety of countries and research questions. In short, the selection of studies was strongly biased. Therefore, the selected studies are not necessarily representative for this field of research.
Due to the limited space, I was not able to go deeper into the more subtle differences between the studies. There is a lot of variation ranging from methodology (e.g., formulation of items, demographics of participants, other measured constructs) to presentation and interpretation of results. These differences are important if we want to compare the results and address issues concerning construct validity and generalization of findings.

Future directions

I offer a few suggestions for future research within this field. First, I encourage researchers to further implement culturally specific research questions that mirror current societal issues. Findings of these studies may not be generalizable to other countries, but they address questions that are important to discourses and public decision making. Furthermore, I would like to see follow-up studies that monitor changes of stereotypes within cultures over time. I also encourage the use of experimental designs. In this review, only Kotzur et al. (2019b) implemented an experimental design to investigate the effects of an intervention on stereotype content. Experiments can offer deeper insights into the mechanisms of stereotype formation and change. Besides that, researchers should reflect upon the capabilities and weaknesses of SCM and pay close attention to the exact operationalization of the dimensions. Future studies should be pre-registered, to prevent modification of hypotheses after the results are known. At last, no meta-analyses have been published within this field of research. A meta-analytical approach could shed further light on the findings and potential issues.

Conclusions

Let's come back to our initial question: How has the Stereotype Content Model been applied across countries and cultures? The short answer: in many ways. In the first part of the review, I presented studies that basically replicated the classic procedure of identifying social groups within a society and rating them in terms of warmth and competence. These studies offer stereotype maps of different countries and identified factors that influence stereotypes across cultures:

1) Income equality (Durante et al., 2013)
2) Inner-state conflict (Durante et al., 2017)
3) Regional differences, e.g., in economic development (Stanciu et al., 2017)
4) Historical events (Liang et al., 2022)
5) Ethnical diversity (Grigoryew et al., 2019)

In the second part of the review, I presented studies that addressed specific research questions in different countries. I appreciate the diversity of this research as it focuses on societal issues within certain regions: Gender and sexual orientation in Sweden (Sendén et al., 2019; Klysing et al., 2021), immigration in Germany (Kotzur et al., 2019a, 2019b), political corruption in Latin America (Ramos et al., 2017) and robots in China (Liu et al., 2022). As I argued in the limitations section, we should remain skeptical about the SCM in its various applications and cautious in comparing results. Future research should pay closer attention to methodological issues. Keeping that in mind, I appreciate that the SCM allows us to relate all the findings to each other, as they are grounded in the same theoretical framework. To conclude, I would like to ass that this field of research struck me as very active and fruitful, implementing the SCM in creative and interesting ways.

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Appendix

Figure 3.

Ratings of 15 European countries in Cuddy et al. (2009). Italicized abbreviations display ingroup ratings, whereas normal font displays out-group ratings.

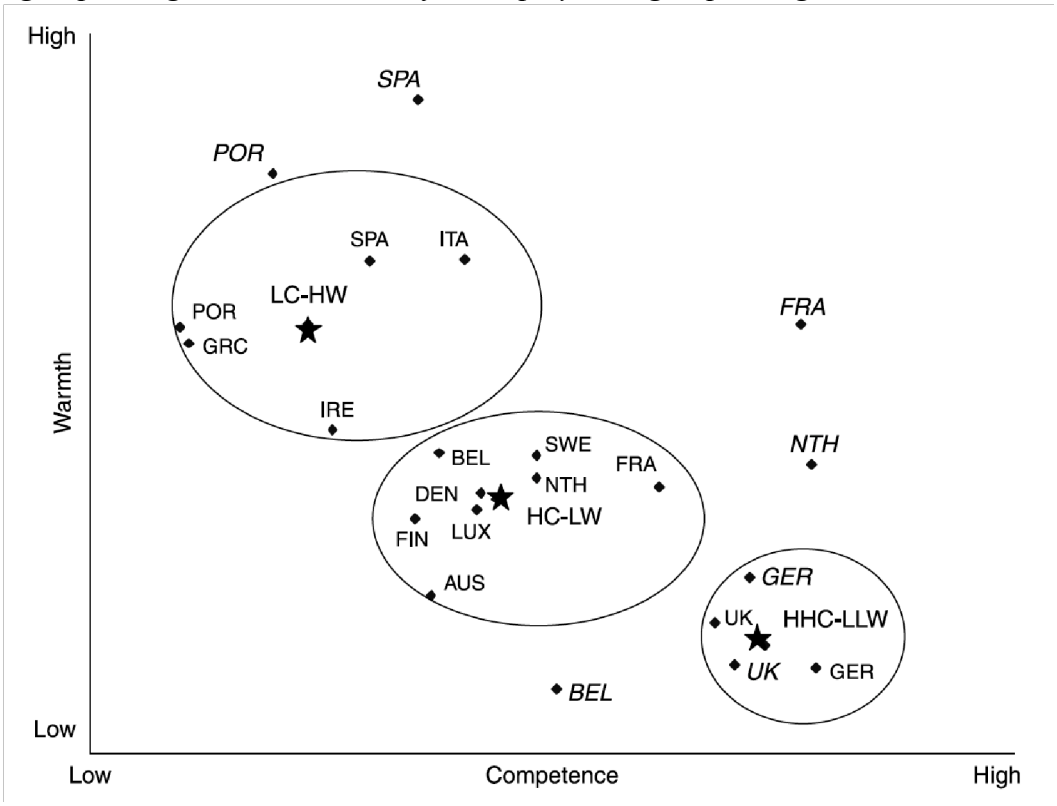

Figure 4.

Ratings of social groups in a Hong-Kong based student published in Cuddy et al. (2009).

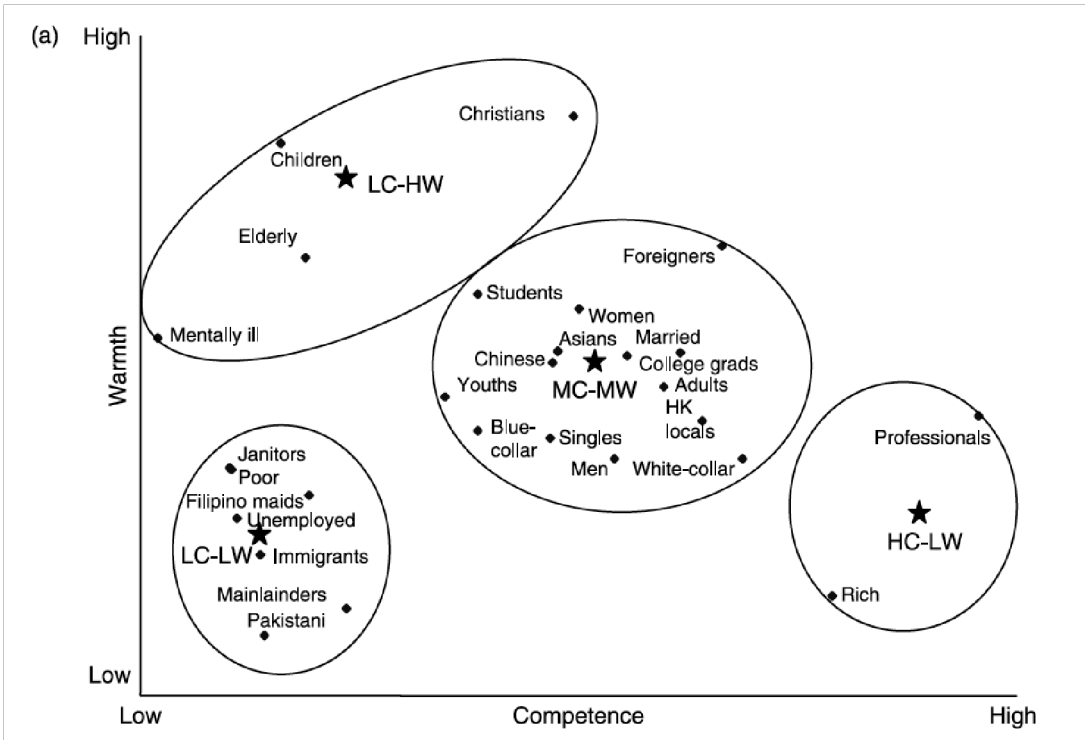

Figure 5.

Across countries, income inequality (Gini coefficient) is negatively associated) with the correlation of warmth / competence ratings (Durante et al., 2013). Stereotype ambivalence is defined as an absence of correlation between warmth and competence ratings. The stronger the correlation between the two dimensions, the lower the ambivalence

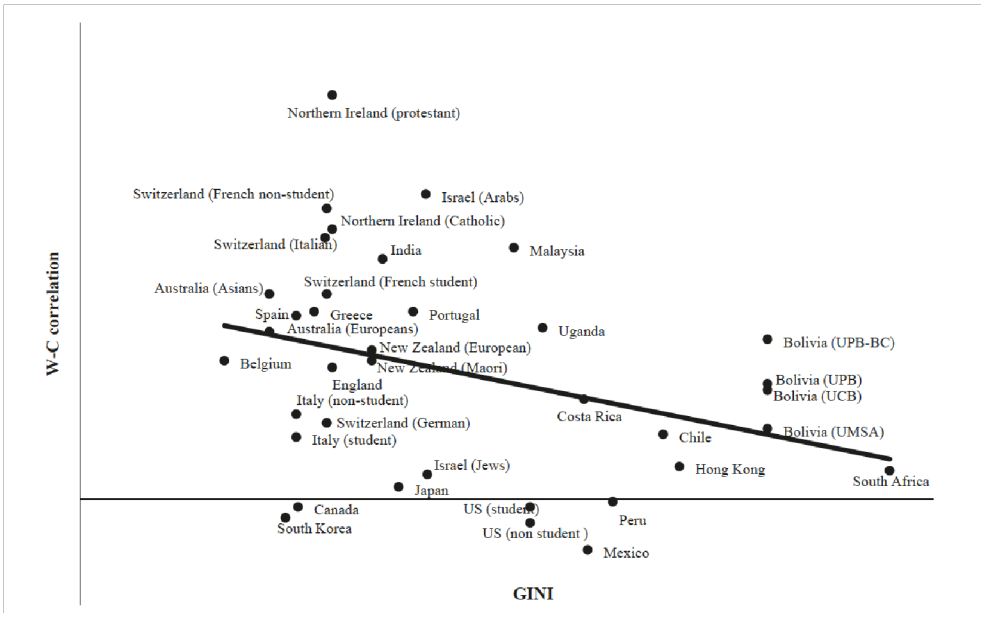

Figure 6.

The relationship of stereotype ambivalence (y-axis) and inner-state conflict (GPI coefficients, x-axis). The relationship is u-shaped (quadratic): countries with high/low conflict display a lower stereotype ambivalence compared to intermediate-conflict nations (Durante et al., 2017).

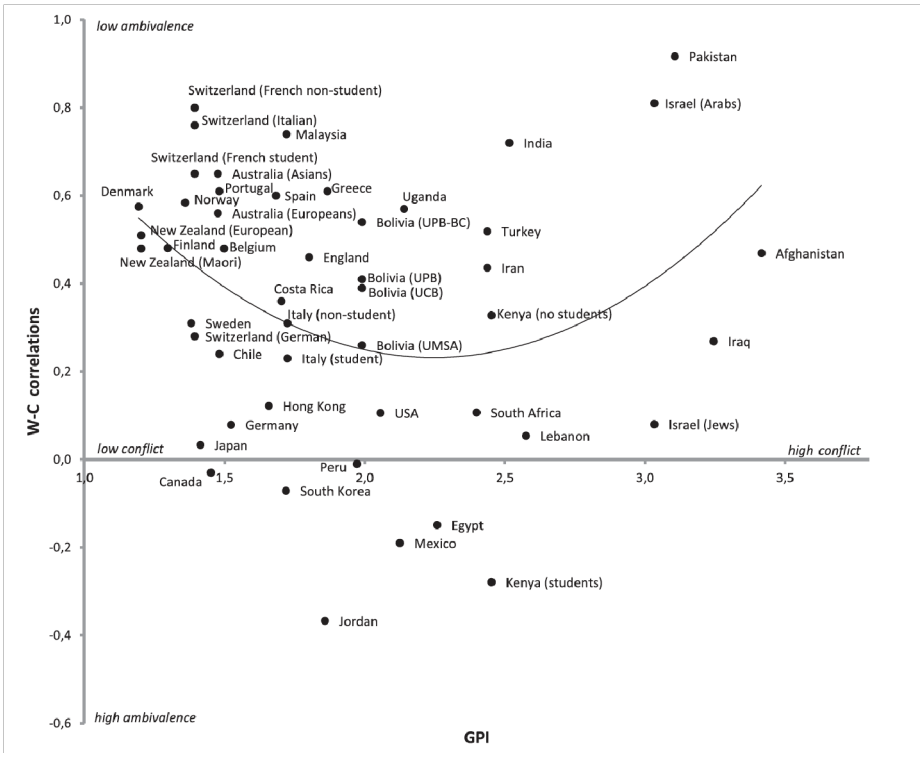

Figure 7.

Stereotypes of groups in Pakistan (Durante et al., 2017). Warmth and competence ratings are strongly correlated (r=.092), displaying very low stereotype ambivalence.

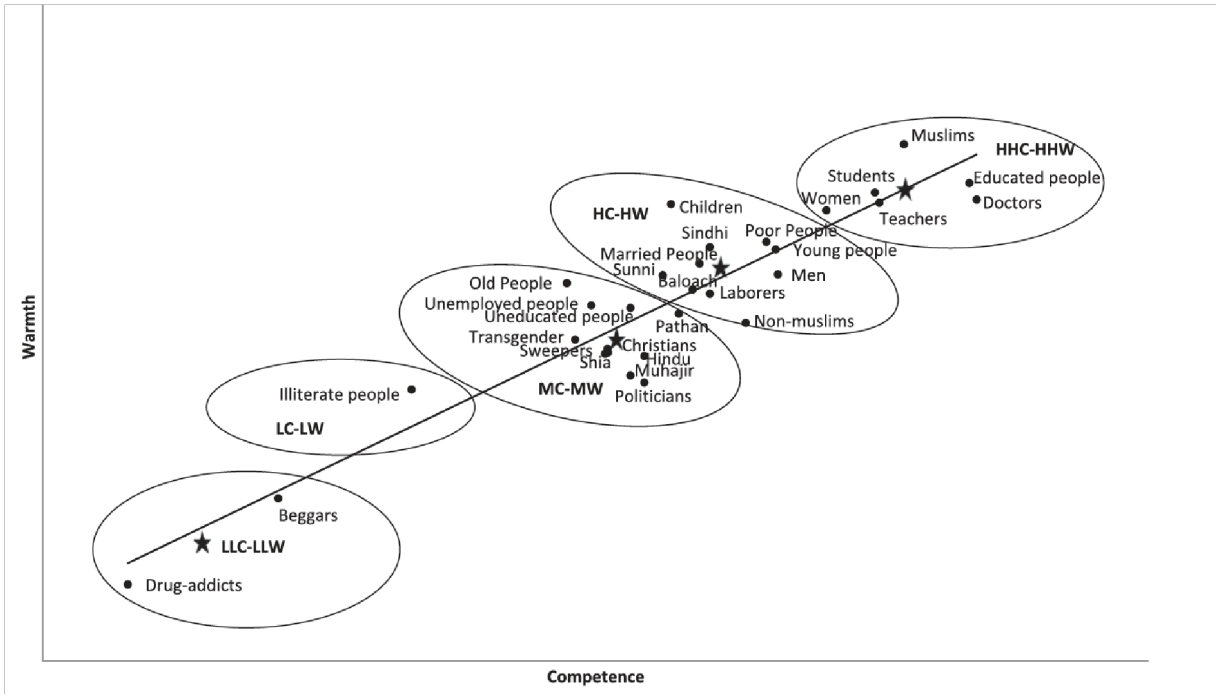

Figure 8.

Dominant emotions associated with the quadrants of the stereotype content map as hypothesized by Liang et al. (2022).