The Information Architecture of Military Spouse Architect Licensing

A Master’s Thesis
Presented to
School of Arts and Sciences
State University of New York
Polytechnic Institute
Utica, New York

In Partial Fulfillment
of the Requirements for the
Master of Science Degree

By
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December 2022
Christopher R. Arnold 2022
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CERTIFICATE OF APPROVAL

Approved and recommended for acceptance as a thesis in partial fulfillment of the requirements for the degree of Master of Science in Information Design and Technology.

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Date

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Kathryn Stam - Thesis Advisor

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Date

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Ryan Lizardi - Second Reader
ABSTRACT

The study investigates the information architecture of state central licensing agency and licensing board websites and forms through the lens of accessibility to determine their usability, discoverability, and findability for military spouse licensing applicants. One hundred websites and forms were examples.

In addition to the accessibility evaluation, state statutes were examined for providing accommodations to military spouses through comity, reciprocity, temporary licensing, expedited licensure, and enhanced licensure via affidavit. Board policies and regulations were also evaluated to determine the impact of license requirements on portability and whether or not they were made accessible.

Findings suggest that despite the availability of a variety of policies to facilitate license portability, most state central agencies and licensing boards have not made these policies accessible. Findings were visualized using Tableau in a series of choropleth maps, histograms and scatterplots.
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Visualizations may be found at: https://public.tableau.com/views/InformationArchitectureofMilitarySpouseArchitectLicensure/Figure1?:language=en-US&:display_count=n&:origin=viz_share_link
Executive Summary

Over the last decade, all fifty states have passed legislation to provide licensing accommodations for military spouses at the United States Department of Defense's request using various approaches ranging from reciprocity, comity, temporary licensure, and expedited processes. Thirty-three states have taken steps to enact enhancements to these policies, and thirty-three states have also created policies to make the information on these accommodations accessible.

![Figure 1. Choropleth Map of State Central Agencies Scores versus State Architect Licensure Board Scores in Continental United States](image)

State licensing central agency and licensing board websites and forms were examined to determine if the information architecture and design conveying these policies were, in fact, accessible to military spouses. The state with the highest overall score for the statutory, license requirement, and accessibility evaluation was Florida, and the lowest-scoring state was Hawaii. The majority of states which made accommodation’s scored poorly for accessibility, while some states which had made only limited accommodations received excellent scores.

States continue to pursue a variety of approaches to reciprocity simultaneously. The United States Department of Labor generally recognizes four categories of licensing
accommodations: where states must recognize military spouse licenses, where the state’s laws exclude many professions, where states must recognize a license if the home state license is substantially equivalent, and where states may choose to recognize a military spouse license (United States Department of Labor Veterans’ Employment and Training Service, 2022).

As one of the oldest professions, architecture is viewed by its national professional association as having little difference in requirements between states (National Council of Architectural Registration Board, 2019). The national association has provided a direct registration that provides all practitioners with limited mobility in states that utilize these procedures. Pursuant to federal law, the United States Department of Defense evaluates state's accommodations for military spouses using three lines of efforts: an immediate, bottom-line effort of the license issued within 30 days of an application, with minimal paperwork and minimal fees, a near-term effort to ensure accommodations are fully implemented and made accessible to spouses, and long-term solutions for instant reciprocity through interstate compacts as part of the strategic basing decision-making process.

These three lines of effort were developed in the last five years. Over the decade prior, much of the focus was prescriptive and aimed at identifying the best method to issue a license. Accordingly, most of the work by scholars and advocacy partners was spent examining these practices and making recommendations. Outside of license compacts, which provide instant reciprocity for a service member or spouse traveling to or from a compact state, there has been no panacea to crafting license policy for non-compact occupations and requirements differ from state to state, making information accessibility even more important to service members and their
families as they transition involuntarily into and out of the states.

Figure 2. Distribution of Website Accessibility Scores By State

Little input has been made into military spouse occupational licensure access. Making information more accessible, mainly through websites, should enhance license applicants’ outcomes without the need for major statutory changes.

Figure 3. Average Licensure Accessibility By State
Literature Review

Forty-eight publications, spanning from 2007 to 2022, were identified for this literature review. The literature review aims to examine the current state of research literature on the nexus between accessible information architecture and military spouse licensing. Furthermore, this review included reviewing publications on information policy and its connection to successful outcomes for military spouse licensure, drawn from academic journals, articles, government, and non-government reports.

Publications were identified using several methods. First, the SUNY Polytechnic Institute’s online library was queried for terms using an “AND” condition to narrow open-access articles and peer-reviewed journals available online:

<table>
<thead>
<tr>
<th>Term 1</th>
<th>Term 2</th>
<th>Term 3</th>
<th>Term 4</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Military</td>
<td>Spouse</td>
<td></td>
<td></td>
<td>1227</td>
</tr>
<tr>
<td>Military</td>
<td>Spouse</td>
<td>Licensure</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Military</td>
<td>Spouse</td>
<td>Licensing</td>
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<td>25</td>
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<tr>
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<td>Accessibility</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Universal</td>
<td>Design</td>
<td>Principles</td>
<td>Website</td>
<td>7</td>
</tr>
</tbody>
</table>

Next, searching Google and specific websites identified government and non-government reports on military spouse licensure focused on information accessibility and scholarly reports on universal design principles of information architecture for websites. Within the search parameters, the publication date for government reports was restricted from 2017 to the present (September 2022). For Google, the search criteria excluded dissertations and were limited to the past six months. Upon review, the results were refined, and reports were excluded if they were not relevant to this review (e.g. did not contain a nexus to information policy and accessibility) or if the data collected was during the COVID-19 pandemic as they may not be representative of
a typical military spouse’s experience when seeking to transfer a license between states. The search websites and search terms are listed in Table 2:

Table 2. Search-engine Queries

<table>
<thead>
<tr>
<th>Website</th>
<th>Query</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google</td>
<td>Military spouse licensure accessibility</td>
</tr>
<tr>
<td>Google</td>
<td>Military spouse licensing accessibility</td>
</tr>
<tr>
<td>Google</td>
<td>Military spouse license accessibility</td>
</tr>
<tr>
<td>Google</td>
<td>Military spouse license portability accessibility</td>
</tr>
<tr>
<td>Google</td>
<td>Military spouse license reciprocity accessibility</td>
</tr>
<tr>
<td>Google</td>
<td>“Universal Design” “Website” (filtered to exclude instructional design)</td>
</tr>
<tr>
<td>Google</td>
<td>“Information architecture” “website” “decision making”</td>
</tr>
<tr>
<td>Department of Defense</td>
<td>Licensure (filtered by military spouses)</td>
</tr>
<tr>
<td>Department of Labor</td>
<td>Licensure (filtered by military spouses)</td>
</tr>
<tr>
<td>Government Accountability Office</td>
<td>Military Spouse employment</td>
</tr>
</tbody>
</table>

Additional sources were identified in areas such as best practices, career planning, information sharing, interstate programs, military dependents, needs assessment, occupational certifications, underemployment, and unemployment when cited within the articles and reports found in the searches, along with scouring the organization and university websites who had produced the articles and reports identified for this literature review.

A total of forty-eight publications were reviewed, and Table 3 lists the number of each type of publication:

Table 3. Number of Works Cited

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal articles</td>
<td>11</td>
</tr>
<tr>
<td>Books/book chapters</td>
<td>6</td>
</tr>
<tr>
<td>Government report</td>
<td>15</td>
</tr>
<tr>
<td>Government-sponsored reports</td>
<td>5</td>
</tr>
<tr>
<td>Non-government report</td>
<td>6</td>
</tr>
<tr>
<td>Website articles</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>48</td>
</tr>
</tbody>
</table>
Results

The Department of Defense (DoD) views taking care of people as vital to retention and readiness, and it is the fourth line of effort in the National Defense Strategy (Lopez, 2019). License portability for military spouses is specifically articulated as one of fifteen issues critical to stability for military families (Secretary of Defense, 2022). Military spouses have reported that finding military spouse-specific guidance about the licensing process within states is extremely difficult (Department of Defense, 2022). DoD has cited the implication that military spouses cannot take advantage of benefits granted to them (Department of Defense, 2021).

Researchers recommended DoD provide guidance and technical assistance to states on how to best publicize the licensing process military spouses should follow when they are seeking an occupational or professional license within the state (Brawley et al, 2021). Information on state-specific assistance and accommodations should be available, consistent, clearly labeled, and explained in easy-to-locate places on state websites and standardized forms (Ibid).

The current understanding of gestalt principles for website design suggests the human brain perceives images as a unified whole rather than as small parts, where visual information is understood holistically before it is examined separately to create unity and understanding in a composition (Katz, 2012). States can reinforce unity in website and form design by applying gestalt principles, making their information architecture accessible (Ibid). These principles will assist military spouses in understanding the actionable steps they must complete when applying for a license (Department of Defense, 2022).

The quicker a license is issued, the quicker a military spouse can begin working (Government Accountability Office, 2021). Making information about the licensing process more accessible streamlines administrative processes for licensure, which are unrelated to an individual’s skills or knowledge (Department of Labor, 2015).
Background
Since 2010, DoD has worked with state policymakers to encourage states to pass laws aiding military spouses in more easily transferring their licenses, including receiving temporary licenses and fast-tracking license applications (Department of Defense and Department of Homeland Security, 2018). These laws were passed in forty-nine states between 2010 and 2018, with Connecticut becoming the fiftieth state to pass a military spouse-specific licensing law in 2021 (Department of Defense 2021). Researchers subsequently determined that states pursued and achieved a variety of approaches to licensing reciprocity for military spouses simultaneously; however, licensing boards have interpreted laws differently than anticipated and implemented them inconsistently (Vergun, 2020).

The best evidence we have about the quality benefits of licensure really pertain to occupations that are universally licensed and that tend to have more harmonized standards across states. So there are very clear quality benefits to many of the ... licensure regimes that we have where, again, the standards don't really differ a whole lot. Where I think the evidence is not there is that's really any quality diminution from less restrictive requirements when those requirements vary quite a bit across states. And so I would say that I have much less concern on that score (Nunn, 2021).

Beginning in 2018, DoD included military spouse occupational licensure access as one if its key quality-of-life issues for states, evaluating states along a continuum for license reciprocity seen in Figure 1 which considers whether information on service member and military spouse licensure policies, defined as “making license policy transparent and easily accessible” is accessible, along with participation in interstate compacts as the preferred optimum end-state, and passage of a state-specific licensing law, as there is yet not a compact for every occupation, nor is each state a member of each compact (Department of Defense, 2019). DoD engages with state policymakers, encouraging them to assess the actions of their licensing boards to fully
implement law changes, and make information about these changes more accessible (Department of Defense, 2022).

In a 2014 survey, the Military Officers Association of America and Syracuse University's Institute for Veterans and Military Families analyzed the cumulative economic impact on military spouses as a result of orders to move from state to state and identified occupational licensure constraints as one of the most significant financial hurdles for the military family (Institute for Veterans and Military Families and Military Officers Association of America, 2014). The Defense Department reported that the unemployment rate for spouses of military members on active duty in 2017 was twenty-four percent (Bevin & Reynolds, 2019). That number has grown considerably during the pandemic, and estimates range from six to seven times that of the average population (Zack, 2022). No other demographic experiences such high unemployment rates, with estimates ranging from twenty-two to thirty percent unemployment among military spouses, according to the U.S. Chamber of Commerce (Greenwald, 2022).

DoD has reported that fifty-three percent of military families are dual-income, meaning employment barriers immensely impact economic security and financial stability (Gittleman et al., 2018). Military families frequently move, on average, once every two to three years following a permanent change of station (Institute for Veter ans and Military Families, 2016). DoD prioritizes operational needs over employment opportunities for military spouses when determining service member assignments, with a few exceptions (Department of Defense, 2015).

There are 605,000 spouses of active duty service members (Department of Defense, 2018). It has been estimated that fifty-percent of active duty military spouses work in a field that requires professional certification or occupational license, and transferring these credentials from one state to another has proven difficult (Institute for Veterans and Military Families and
Military Officers Association of America, 2014). When including the spouses of members of the National Guard and reserve component, thirty-five percent of all military spouses require a license to perform their occupation (Office of People Analytics, 2019). However, only thirty percent of spouses seek relicensing after a permanent change of station due to the unnecessary barriers states create (Department of Defense, 2022).

A 2018 report by the president's Council of Economic Advisers found that licensed military spouses earn twenty-seven percent more than their civilian counterparts with similar skills and experience (Bevin and Reynolds, 2019). Several studies indicated that military spouses linked frequent moves to the cause of this wage gap (Richter & Schneider, 2015).

Unemployment, underemployment, and reduced labor force participation among military spouses cost the U.S. economy almost $1 billion annually (Blue Star Families, 2016). Female spouses of enlisted service members reported higher rates of involuntary part-time employment or unemployment (Lim and Schulker, 2010).

In 2020, the United States Congress made military spouse license reciprocity a factor which must be considered by the military services when making strategic basing, homeporting, stationing, new mission, and base realignment and closure decisions (Department of Defense, 2021). When developing the analytic framework for the basing scorecard, policy professionals determined that the preferred solution for long-term career portability is interstate compacts, which provide for a seamless transition between states and allow military spouses to work immediately (Secretary of Defense, 2022). The experts also valued military spouse specific rules that provide temporary licensing, endorse another states’ license, or expedite the licensing process (Department of the Air Force, 2021). The national trend has been toward greater recognition of out-of-state licenses (Uniform Law Commission, 2022).
Available alternatives for military spouse license portability are categorized by DoD as being more immediately attainable, achievable within the near-term, or obtainable in the long-term (Department of Defense, 2021):

![Figure 4. OSD View of License Portability Continuum](image)

Interstate licensure compacts are perceived as optimal insofar as even were a state to waive all licensure requirements for applicants seeking to practice there, there is no state specify law or policy which can be adopted to address residents of that state who are currently stationed in, or accompanying a service member in a differing state, or who are involuntarily relocated to a different state and would be subject to that state’s licensure regime (Secretary of Defense, 2022).

**Problem Statement**

Occupational and professional licenses are state-specific, with each state having its own licensing requirements, and although there has been little evidence of any quality benefit to these protectionist schemes, having to substantiate competency and verify documents when holding
substantially similar qualifications can be one of the most time-consuming parts of the licensing process, compounded by licensing boards which are understaffed, meet infrequently, and require continuing education which is not relevant to performing the license sought (Veterans' Employment and Training Service, 2022). These different requirements across state lines provide no benefits to license applicants or consumers yet make it difficult for military spouses to find and maintain employment (Executive Office of the President, 2013). Licensure reciprocity has an outsized impact on military families of color, who face substantially greater unemployment and lower earnings, with the barriers created by licensure regimes serving to reduce competition for employment within a state, enrich occupational associations and trade unions who control continuing education requirements, and artificially exclude workforce participation by historically excluded groups in historically underserved communities (Blue Star Families, 2022).

Researchers have identified that despite having supportive legislation to provide accommodations for military spouses, states and individual occupational boards within states have struggled when communicating these processes (Winters et al., 2022). Past studies have found a lack of visibility of supportive policies for military spouses on websites and inconsistent implementation by licensing agencies and occupational boards (University of Minnesota, 2017). In 2020, of ninety-two licensing boards which expedited applications from military spouses, twenty-four percent did not post the information online or ask a question about military spouse status on the license application (Ballard & Borden, 2020).

A lack of transparency increases barriers for military spouses attempting to relicense in a new state (Department of Defense, 2021). In 2017, less than forty percent of licensing boards had information specific to military spouse licensure on their websites, while forty-four percent of online applications were not accessible on the first attempt, and customer service representatives
were found to be more frequently unaware of legislation specific to military spouses (University of Minnesota, 2017). In a 2021 study, only thirty-five percent of licensing board websites provided information on military spouse-specific licensure policies or application details (Brawley et al, 2021). That same study found thirty-three percent of the examined boards contained the word "Military Spouse" on their home page or in another easy-to-find location on their website (Brawley et al, 2021).

These information accessibility challenges are compounded by other factors, such as when unemployed or low-income individuals are less thorough in their searches for information (Loibl et al., 2009). Unemployment and underemployment among military spouses lowers job-search efficacy (Trougakos et al., 2007). These military spouses may not take it upon themselves to self-identify their military spouse status or inquire about the state’s licensing policies when at the same time, they report websites are one of the most used and valuable resources (Plantier & Durband, 2007). Accessing applications for military spouses is the main barrier to using state laws designed to ease their license transfer (Department of Defense, 2022).

Recommended Design Considerations

Merely having an excellent licensing law is insufficient, as data does not change behavior (Damasio, 2003). An interface is a mediator between users and a goal (Cairo, 2012). Lidwell indicates that an activity will be pursued only if its benefits are equal to or greater than its costs (Lidwell, 2010). Format impacts decision-making far more than substance (Katz, 2012). Damasio’s research claims Broca’s and Wernicke’s areas, cognition areas of the brain specialized for language comprehension, are primarily influenced by emotions rather than data, with decision-making beginning subconsciously in the amygdala (Damasio, 1994). Neuroscience discoveries have shaped universal design principles in brain variability, neuroplasticity, the goal-
driven brain, the importance of prior knowledge, attention, curiosity, and the brain’s memory (Shi, 2020).

The design of websites and forms by occupational boards and state licensing agencies impacts the burden military spouses face (Brawley et al., 2021). Information architecture must allow the military spouse to be aware of and engage with the law, improving information processing (Kaltenbacher, 2009). Making information about the licensing process within a state more accessible has aided with licensure efforts targeted at veterans (National Governors Association Center for Best Practices, 2015). Access must be maximized through equitable, flexible, intuitive, perceptible, and simple design considerations to maximize usability by military spouses with various characteristics (Lidwell, 2010). However, “one-size-fits-all” approaches deny individual differences in learning strengths, challenges, and interests (Rose & Strangman, 2007). Complex licensing policy information should be progressively disclosed (Lidwell, 2010).

Cairo puts audience identification at the top of priorities for designing information, which should be adaptable to the nature of an average reader (Cairo, 2012). User interface design is iterative (Lidwell, 2010). A user-centric design mindset can improve user experience and give military spouses a voice (Baer & Vacarra, 2008). Designs that help military spouses perform optimally may not be the ones they find the most desirable (Lidwell, 2010). The Design of Everyday Things, published in 1988, advocates placing user needs ahead of the designer’s aesthetic concerns (Cairo, 2012).

Perspective-taking is key to making the data and story synonymous for military spouses seeking to transfer their licenses (Katz, 2012). This can be aided by acquiring qualified
employees who are knowledgeable in the military spouse-specific policies and procedures in
their states and who will naturally have a voice in designing websites and forms (Roberts, 2012).
The United States Department of Labor provided state licensing agencies and occupational
boards guidance on making their websites more accessible (Department of Defense, 2019).
Licensing boards can make information more accessible by including a button or link containing
the phrase “military spouse” on their website (Brawley et al., 2021). Efforts to reduce burdens
for military spouses could include displaying information on relocation-related accommodations
on websites, such as a link to the legislation (University of Minnesota, 2017).

Democracy gives a voice to the powerless, yet the internet has struggled to achieve this
goal on its own due to educational and economic barriers (Holsen & Pasquier, 2012). Since 2001
over fifty nations have granted people the right to access information (Ibid). A statutory
requirement to display accommodations on websites and forms reduce using universal design
principles can reduce obstacles for military spouses applying for licenses while disseminating
information to them effectively, such as North Carolina’s 2020 law requiring all licensing boards
to post to their websites a document summarizing opportunities available to veterans and military
spouses (Schultz, 2021). It also requires boards to report annually on the number of military
spouse’s applicants, how many are granted a license and the average processing time, the number
denied a license for any reason, and a summary of the reasons for denial (Ibid). Comparative law
reviews have cited Washington’s 2017 requirement for agencies to file annual reports on
implementing their military spouse license portability law with the legislature and 2020 effort to
create a military spouse liaison within the State Department of Veterans Affairs, charged with
developing a standard form for spouses to complete (Ibid). Illinois created a similar liaison in the
Department of Financial and Professional Regulation to manage all expedited military spouse licensure applications, even those who have not yet relocated to the state (Ibid).

The Government Accountability Office found that inconsistent information sharing across DoD and with external stakeholders who help spouses with employment hindered the effectiveness of outreach (Government Accountability Office, 2021). Without strategies for sharing information among internal and external stakeholders, military spouses miss opportunities for increased awareness of resources and policies which support their employment opportunities (Ibid). DoD should recommend states enact policies to audit programs meant to ease barriers to employment for military spouses, effectively communicate licensure processes using gestalt principles, fund professional development for state licensing board staff on the issues faced by military families, and enhance data collection on military spouse licensure processes (Winters et al., 2022).
Methodology

Researching the information architecture of architectural licensing for military spouses within states will answer two discrete questions: “What military spouse specific licensing policies are available in a given state?”, and “Is information about such policies accessible?” Methodologically, performing comparative law review by researching state policies in the area of spousal licensure and board accommodations, and a heuristic evaluation as a function of competitive usability testing of the websites of state licensing agencies and boards will answer these questions. By qualitatively assessing the presence of military spouse specific licensing accommodations by states, and quantitatively coding them for measurement and comparison, a score can be derived which rank the states in order from most accessible to least accessible (Sun, 2017).

A Tableau artifact can be generated to visualize these results and provide data in tabular format. Choropleth maps can visualize this data, and histograms can be prepared to illustrate accessibility based off the usability, findability, and discoverability of state websites and forms.

There are over one million military spouses in the United States, of whom ninety-one percent are female, up from ninety-three percent just ten years ago, with an average age of thirty-two and an education level much higher than civilian equivalents (C. Mentzer, personal communication, October 14, 2022) Military spouses are more diverse than the general population and acutely so around most major military installations (Ibid).

Theoretical Basis

Much like construction architecture theory is used to validate design considerations in a physical environment, information architecture requires a framework of understanding for building websites (Wan Mohd, et al., 2006). The framework includes consideration of cultural dimensions and the unique factors appertaining to the military community, occupations, and
professional licensing boards, as well as the dimension of context, wherein users can find what they need (Wan Mohd, et al., 2007). Rosenfeld and Morville identify four elements of information architecture: organization systems, labeling systems, navigation systems, and searching systems (Rosenfeld & Morville, 2006). However, information architecture and user experience remain discrete concepts encompassing different aspects of user behavior, with information architecture relying on a content structure to achieve user goals (Wan Mohd, et al., 2007). User experience is geared towards emotional decision-making and influencing user actions, which Palladio argued are analogous to Vitruvius Theory in traditional architecture, using utility (Utilitas), or navigation, and aesthetics (Venustas), or representational delight, to create “quality to stand” (Firmitas) for content (as cited in Wan Mohd, et al., 2006).

The United States Census Bureau tracks interstate migration and has found that occupational licensing does not affect the equilibrium number of practitioners or consumer pricing but significantly impacts practitioner entry and exit rates (Zapetal, 2017). In contrast, states with the strictest licensing standards benefit primarily from higher revenues in schools offering training for licensees (Ibid). The Federal Trade Commission reported that most theoretical literature had not found any correlation between licensing restrictions and service quality, with the latter impacted by other factors not controlled by licensing (Cox & Foster, 1990). Theoretical models show that the economic factor most impacted by licensure is interstate mobility, as individuals decide between migrating to a new labor market or staying in their current one (Johnson & Kleiner, 2020).

Military spouses are subject to involuntary relocations every two to three years, therefore, migrate involuntarily. (Department of Defense and Department of Homeland Security, 2018). Licensure is structured differently within each state (Executive Office of the President, 2013).
Every state has enacted some form of military spouse-specific licensing accommodation, benefits not uniformly applied to or implemented by every occupation within the state (University of Minnesota, 2017). Additionally, some state licensing agencies and boards are granted authority by their state’s administrative procedure act to promulgate regulations, enact rules, or adopt policies that may benefit military spouses (Donabedian, 1993).

In some instances, the state board representing the occupation or profession, or “occupational board,” has sole authority to determine license issuance (Federation of State Boards of Physical Therapy, 2015). In others, the state’s licensing agency determines or delegates the authority to do so, while the board merely sets standards and policies for the practice of the occupation (Federation of Associations of Regulatory Boards, 2015). The Council on Licensure, Enforcement, and Regulation proposed five models to characterize board autonomy (Shimberg & Roederer, 1994):

- **Model A (17 states, AL, AZ, AR, CA, KY, LA, MD, MN, MS, NV, NH, NC, ND, OH, OR, WV, WY):** Boards are fully autonomous, hiring their staff, managing procurement and setting policy, investigating complaints and disciplining licensees, preparing and grading examinations, determining licensing qualifications and standards of practice, collecting fees and maintaining financial records, issuing licenses, mailing applications, and renewals, and communicating with licensees and the public (*Ibid*).

- **Model B (3 states, CO, MO, SD):** Boards are autonomous in most areas, setting policy, investigating complaints and disciplining licensees, preparing and grading examinations, and determining standards of practice, while a central agency is responsible for housekeeping items such as staffing, procurement, collecting fees,
issuing licenses, mailing applications, and renewals, and communicating with licensees and the public (Ibid).

- Model C (16 states, DE, FL, GA, HI, ID, IA, KS, MI, MT, NJ, NM, PA, TN, TX, VA, WI): Boards are semi-autonomous and hold decision-making authority in many areas, while the central agency has authority beyond housekeeping for matters such as budgets, complaints, and discipline (Ibid).

- Model D (8 states, AK, CT, IN, MA, NE, RI, SC, UT, WA): Boards are not fully autonomous and do not have final decision-making authority, with the central agency providing most services and delegating authority for specific functions such as preparing and grading examinations, recommending professional standards and disciplinary actions, and other activities subject to review by the central agency (Ibid).

- Model E (6 states, IL, ME, NY, OK, VT): Boards are strictly advisory to the central agency director, council, or commission, who performs all functions with or without the assistance of the board if one exists (Ibid).

Certain states may have more than one parent agency that is the ultimate authority for a group of occupational boards, which is generally delineated, although not always, between labor and trade occupations and health professions (Federation of State Boards of Physical Therapy, 2015). State policymakers continue to seek to develop a more innovative occupational licensing framework by gathering data, enacting reforms, increasing board oversight, changing licensing requirements, and removing unnecessary barriers through multiple pathways (National Conference of State Legislatures, 2019). Some states are perceived to unnecessarily segment licensure of a profession between different occupational titles to consolidate market power and
have recently come under judicial scrutiny (North Carolina State Board of Dental Examiners v. Federal Trade Commission, 2015). The President directed Federal agencies to use their rulemaking authority to prohibit unfair licensing restrictions, which inhibit labor market competition, but legislative power regarding intrastate practice and reciprocity is vested in state governments (Exec. Order No. 14036, 2021).

**Scope & Constraints**

Analysis of a compact occupation would yield little benefit, as license reciprocity is instantaneous (Department of Defense, 2022). As it is impossible to predict if a military spouse subject to involuntary relocation between states will be aware of differences in regulatory models, to assess information accessibility within a defined population in a manner that can be replicated, we must determine the presence of military spouse specific information on both the central agency’s website and the relevant occupational board website, along with the form used to issue the license (Bauer et al., 2014).

Narrowing the scope of inquiry to consider a specific licensed occupation with no differentiation between titles, and a strong basis in public interest, can yield empirical results from studying the occupational board and central agency for that occupation across states using different research methods. Architecture is one of the nation’s oldest professions and was first licensed in Illinois in 1897 (Craven, 2020). Unlike most occupations, where state-specific requirements are trivial and designed to discourage competition or enrich special interest groups which control continuing education, architecture is one of a handful of professions that feature unique circumstances that may require additional training in the interest of public safety, such as winterization expertise in Alaska, or seismology training in Oregon (T. Perreault, personal communication, October 13, 2022). New York State has an alternative view, and describes architecture as a professional license with additional or fewer uniform requirements and
specifications, which takes additional time to review (New York State Office of the Professions, 2022).

To earn an architectural license, most states require applicants to follow the standard licensing requirements as set by the National Council of Architectural Registration Board (NCARB), which include earning a degree from a program accredited by the National Architectural Accrediting Board, completing an NCARB approved Architectural Experience Program (AXP), a passing score on the NCARB’s Architect Registration Exam (ARE), and payment of required fees according to the laws of the state (National Council of Architectural Registration Board, 2019). Therefore, a military spouse who has earned an architect’s license in a given state by meeting these requirements will be deemed highly likely to qualify for licensure in the state they are being involuntarily relocated to with the same requirements. Although not directly a compact, certain states have agreed to offload licensing requirements to NCARB, known as Direct Registration States, and once requirements are met, the state will issue a license (Crawford, 2022). NCARB has developed an online Licensing Requirements Tool to help applicants explore and compare jurisdictions for both individuals and firms, and a checklist of twenty-one possible initial registration requirements, fourteen possible reciprocal registration requirements, five possible renewal requirements, and six possible practice restrictions, for each state (National Council of Architectural Registration Board, 2022).

Critically, this tool contains no information for military spouses, nor is there any information for military service members or spouses on NCARB’s website, except an article by a military spouse architect about the therapeutic benefits of architecture veterans with Post Traumatic Stress Disorder (Hilton, 2021). The only online resource which could be identified for military spouse architects was the Depart of Defense’s Office of Spouse Education and Career
Opportunities, which is geared towards helping military spouses obtain the education and skills necessary to pursue a career in architecture rather than assisting current practitioners who are relocating with licensure (Spouse Education & Career Opportunities, 2022). The Government Accountability Office has called on DoD to do more (Government Accountability Office, 2021).

**Comparative Legal Review**

Ernst Rabel’s functional approach to comparative law is the basis of mainstream methodology (Husa, 2011). When considered within the framework of another discipline, such as information design or occupational licensure and competition policy, functionalism connotes the formal outcome of chosen policies, facilitating comparison (Michaels, 2011). Our research and evaluation focus on licensing policies relating to military spouse mobility and antitrust areas rather than those appertaining to consumer protection designed to restrict labor market competition (Vaheesan & Pasquale, 2017). Board policies will be weighted equally against the laws of the state and the rules of the board’s parent licensing agency, if applicable, while no score will be awarded or deducted for a state’s participation in national standards for licensing requirements, to exclude the biases of professional self-regulation (Robinson, 2018).

To ascertain the accessibility of military spouse supportive licensure policies within states, we take the perspective of a military spouse architect licensure applicant and begin data collection by cataloging those policies (Kiss, 2018). Now that fifty states have enacted military spouse-specific licensure laws, a comparative legal review will allow us to qualify the affordances provided by those laws, which are typically a combination of (i) subjective license reciprocity based on a crosswalk of substantially similar licensure requirements in other states or direct endorsement of substantially equivalent out-of-state licenses, (ii) temporary licenses, issued while awaiting full licensure determination or meeting state-specific requirements in the new state, or in lieu of a full license and performing under some restricted scope of practice,
under supervision, or both, and (iii) expedited licensure, where a spouse's application is “prioritized” (Department of Defense, 2020).

As the definitions of these terms vary between states (for example, one state’s “expediting” may simply mean moving an application to the top of a pile, while another may have a dedicated military spouse license ombudsman and adjudicator, and yet another may define expedited as completing the determination within a maximum allotment of time), we must also examine enhanced spouse license portability, a term DoD defines as meeting their 30-day baseline for license issuance, wherein a state waives license requirements, or issues a full license upon receipt of an affidavit stating the military spouse meets all requirements within the state, or by some other means, such as an exemption from licensure requirements (colloquially known as universal licensure) (Department of Defense, 2018). Further, I will conduct a statutory analysis to determine if states have a military spouse licensure information accessibility statute on the books, requiring information to be visible (Department of Defense, 2021):

Table 4. Statutory Review

<table>
<thead>
<tr>
<th>State</th>
<th>Weak to Moderate Portability</th>
<th>Baseline Reciprocity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Licensure by reciprocity</td>
<td>(0 – 4 points)</td>
</tr>
<tr>
<td></td>
<td>Temporary licenses?</td>
<td>(0 – 4 points)</td>
</tr>
<tr>
<td></td>
<td>Expedited licensure?</td>
<td>(0 – 4 points)</td>
</tr>
<tr>
<td></td>
<td>Enhanced Licensure?</td>
<td>(0 – 8 points)</td>
</tr>
<tr>
<td></td>
<td>crosswalk?</td>
<td>(0 – 2 points)</td>
</tr>
<tr>
<td></td>
<td>(0 – 2 points)</td>
<td>(0 – 2 points)</td>
</tr>
</tbody>
</table>

I will assign states two points for a law, and two points for an agency or board regulation, rule, or policy, to offer portability temporary licenses, or expedited applications. States will receive one point for either a law or board policy accommodating licensure through comity or reciprocity. States will be awarded four points for a law, and four points for an agency or board...
regulation, rule or policy, establishing enhanced licensing practices in statute or by rule for endorsement or temporary licensure with an affidavit, or via an exemption from state requirements. If a state has passed a licensure enhancement law but it does not apply to architects. States will be awarded half points.

These four factors can be present in statute, but may also have been enacted by central agency or board regulation, rule, or policy, therefore a second-level analysis for non-statutory military spouse specific licensure policies specifically for architects will be included as a fifth line of inquiry. In addition to cataloging the presence of military spouse specific licensure policies, it will be necessary to similarly evaluate the architect licensure requirements by state and determine variability by creating a checklist of what a military spouse should know, since the absence of this information on an agency or board’s website could impair a military spouse applicant’s ability to understand and complete the licensing process expeditiously.

Table 5. Board License Requirement Review

<table>
<thead>
<tr>
<th>Spectrum</th>
<th>License Requirements</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal (NCARB Requirements)</td>
<td>1. Degree requirement?</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>2. AXP requirement?</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>3. ARE requirement?</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>4. Fee requirement?</td>
<td>+1 if waived</td>
</tr>
<tr>
<td>Supportive</td>
<td>1. License via endorsement?</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>2. Direct registration state?</td>
<td>+3</td>
</tr>
<tr>
<td>Unportable</td>
<td>1. Degree verification?</td>
<td>-1</td>
</tr>
<tr>
<td></td>
<td>2. Continuing education prerequisites?</td>
<td>-1</td>
</tr>
</tbody>
</table>
3. Supervisory requirements? -1
4. Other state requirement? (affidavit of understanding, additional state-specific exam, personal interview) -1
5. Background check before license? -1
6. Reference check? -1
7. Limitation on scope of practice? -1

*From -7 to 7 points.*

This qualitative information can then be quantified to illustrate the number of states which have enacted these policies. This work expands upon the research of the National Conference of State Legislatures’ National Occupational Licensing Database, which attempts to provide licensing information for 34 occupations in states, but has not yet considered architectural licensing (National Conference of State Legislatures, 2019).

**Competitive Usability Testing**

The federal government introduced a set of U.S. Web Design Standards, initially aimed at helping veterans access their GI Bill benefits, for federal workers to utilize common UI components and visual styles to enhance digital accessibility (Dew et al., 2015). From the government’s perspective, `usability.gov` is now deprecated and subsumed by `digital.gov`, however, most state agency websites and occupational board websites are mainly following the standards of their state rather than federal guidance (Department of Justice, 2003).

The most empirical way to estimate military spouse user experience is to customize a version of a System Usability Scale specifically for military spouse architect licensing applicants (Subiyakto, et. al, 2021). The research questions will inform the usability test, and when combined with the scores from the comparative legal review for a maximum of fifty points, the state's information architecture can be ordered from most accessible to least accessible for
military spouse architect license applicants (Robinson, et al., 2017). Wurman and Katz coined the phrase information architecture in 1975, as understandable instructions for organized space (Resmini & Rosati, 2011). To evaluate the information accessibility of military spouse-specific licensure policies for architects in the state, we can evaluate the information architecture of websites and forms through the lenses of usability, discoverability, and findability (Katz, 2012). Data collection will be centered on heuristic evaluation to examine the websites of state licensing agencies and boards and licensure applications to assess the interface and their compliance with the universal design principles (Nielsen & Molich, 1990).

Heuristic evaluation is a usability inspection, with the ISO/IEC 9241 standard defining usability as “the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use” (Rusu et al., 2011). Lidwell’s treatise on usability is apt insofar as affordances, or the presence of a button, link, or text containing the word “military spouse” will be a key indicia of accessibility within the information architecture (Lidwell, 2010). Findability allows users to discover content they assume is present on a website, whereas discoverability describes when users encounter new content of which they were not previously cognizant (Cardello, 2019). As site maps are rarely used secondary navigation features, they will not be included (Nielsen, 2008).

Nielsen’s Heuristics of visibility of system status, matching between the system and the real world, user control and freedom, consistency and standards, error prevention, recognition rather than recall, flexibility and efficiency of use, aesthetic and minimalist design, helping users diagnose and recover from errors, and help and documentation allows us to develop a continuum for evaluating accessibility by weighing content against navigation (usability.gov, 2015).
This research builds upon the work of Brawley, et al., 2021, who as part of a larger study of licensing processing times for five occupations, accountancy, cosmetology, dentistry, education, massage therapy, and pharmacy, examined information accessibility by assessing each occupational board’s website and coding the responses to three questions. I will utilize my research questions to holistically evaluate accessibility by producing analytic, descriptor-focused scores of the visual design, the presence of military spouse specific data, and the amount of clicks needed to access such data (Hade, 2021).

Table 6. Accessibility Review

<table>
<thead>
<tr>
<th>State Code:</th>
<th>Type: □ Agency □ Board</th>
<th>Model: (A/B/C/D/E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Military Spouse Occupational Licensure Access Statute: □ Yes (2 Points) □ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessibility Determination</td>
<td>1 Point</td>
<td>2 Points</td>
</tr>
<tr>
<td>Usable Application / Form?</td>
<td>Application form asks “Are you affiliated with the Armed Forces” or comparable.</td>
<td>Military spouse specific article contains link to application form.</td>
</tr>
<tr>
<td>Usable Website?</td>
<td>Military spouse specific article on website.</td>
<td>Military spouse specific article explains process or contains text of policy.</td>
</tr>
</tbody>
</table>
There are a maximum of 25 points total for each state.

Coding

States that are members of an interstate licensing compact for an occupation maintain their state-specific license for residents uninterested in compact privileges or for out-of-state applicants coming from a non-compact state (Department of Defense, 2021). As this creates further layers of complexity in terms of communicating useful information to military spouse applicants, an occupation such as architecture which does not yet have an interstate compact, or a high degree of variability between states for state-specific licensure, provides a baseline to assess information accessibility while meeting the timing and scope constraints of this thesis by narrowing the amount of information considered and the amount anticipated to be conveyed thereunder (Brawley et al., 2021).

When combining the qualitative evaluation of the comparative legal review and the competitive usability testing to determine a quantitative numerical score, states will be scored most highly for not only having a policy, but by considering their information architecture of how users might to interact with need such a policy (Brown, 2010). The highest possible score is derived from making the “front door” of their website or form accessible by containing a button,
link, or text specific to military spouses leading to an artifact containing information on the policy, licensing requirements, and steps needed to meet them (Ibid). Scores from the comparative law review will be put into tabular format and compared against the results of the visual inspection and usability testing, with a total of 50 points will be assigned, to determine which states best manage the flow of information and enable wayfinding for military spouse architect licensure applicants (Rosala, 2022).

While search engines may return a result for the legal wording of a state’s policy for licensing military spouse architects, it may or may not provide context on the actual process and steps needed to apply for and obtain the license, and such results which link to non-state agency or board websites or compilations of state laws, rules and regulations will not be considered a measure of accessibility, other than to assist with awarding a baseline score for the presence of the policy (Brawley et al., 2021).

**Recommendations for Future Research**

My research questions examined how information architecture affects a military spouse architect's right to earn a living through interdisciplinary examination of both legal ethnography and digital ethnography at the intersection of technology and the relationship between the law and the culture of mobile military spouses, and legal consciousness and a spouse's life story (Kiss, 2018). With limited time to conduct field research for this thesis, several human-centric user research methods which require participatory involvement must be excluded, such as focus groups, diary and camera studies, and eye tracking, where military spouses could be asked to rate each agency or board website or form using the System Usability Scale with Single Ease Questions (Subiyakto, et al, 2021).
Future research on this topic could expand to include other occupations, including interstate compact occupations to determine if states make information on their state-specific license and compact license accessible, utilizing participant driven user-experience research methods such as tree testing, card sorting, and click testing by military spouse survey participants to help researchers understand why usability, findability and discoverability are low for a given state or occupation (Cardello, 2019).

These attitudinal insights about user’s mental models would generate additional context to inform the data collected in this research thesis (Nielsen, 1990). Both data sets should be tested against real-world outcomes to determine if license accessibility enhances license issuance outcome (Sun, 2017). Analytical information regarding processing times, raw number of licenses issued to military spouses, and clickstream analysis may be obtained under a state freedom of information law request, the timing for which is prohibitive to include in this current study (Cardello, 2019). These assessments can inform states on how best to make their information architecture more accessible to convey supportive policies to intended audiences such as military spouses (Department of the Air Force, 2019).

**Findings and Conclusion**

Data collection proceeded across fifty state agencies and fifty state architectural boards, which were manually reviewed using the legal assessment (Table 4), board license requirement (Table 5), and information accessibility (Table 6) evaluation frameworks developed for the overall assessment. The overall scores are reflected in Table 7:

<table>
<thead>
<tr>
<th>State</th>
<th>Regulatory Model</th>
<th>State Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida</td>
<td>C</td>
<td>41</td>
</tr>
<tr>
<td>Maine</td>
<td>E</td>
<td>40</td>
</tr>
<tr>
<td>Idaho</td>
<td>C</td>
<td>39</td>
</tr>
<tr>
<td>State</td>
<td>Grade</td>
<td>Score</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>D</td>
<td>37</td>
</tr>
<tr>
<td>New Mexico</td>
<td>C</td>
<td>36</td>
</tr>
<tr>
<td>South Carolina</td>
<td>D</td>
<td>36</td>
</tr>
<tr>
<td>California</td>
<td>A</td>
<td>35</td>
</tr>
<tr>
<td>Delaware</td>
<td>C</td>
<td>35</td>
</tr>
<tr>
<td>Missouri</td>
<td>B</td>
<td>35</td>
</tr>
<tr>
<td>Virginia</td>
<td>C</td>
<td>35</td>
</tr>
<tr>
<td>Colorado</td>
<td>B</td>
<td>32</td>
</tr>
<tr>
<td>Utah</td>
<td>D</td>
<td>32</td>
</tr>
<tr>
<td>Michigan</td>
<td>C</td>
<td>31</td>
</tr>
<tr>
<td>Vermont</td>
<td>E</td>
<td>31</td>
</tr>
<tr>
<td>Alaska</td>
<td>D</td>
<td>28</td>
</tr>
<tr>
<td>Mississippi</td>
<td>A</td>
<td>27</td>
</tr>
<tr>
<td>Arkansas</td>
<td>A</td>
<td>26</td>
</tr>
<tr>
<td>Maryland</td>
<td>A</td>
<td>26</td>
</tr>
<tr>
<td>Ohio</td>
<td>A</td>
<td>26</td>
</tr>
<tr>
<td>Kansas</td>
<td>C</td>
<td>24</td>
</tr>
<tr>
<td>North Dakota</td>
<td>A</td>
<td>24</td>
</tr>
<tr>
<td>West Virginia</td>
<td>A</td>
<td>23</td>
</tr>
<tr>
<td>Arizona</td>
<td>A</td>
<td>22</td>
</tr>
<tr>
<td>Iowa</td>
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<td>22</td>
</tr>
<tr>
<td>Illinois</td>
<td>E</td>
<td>21</td>
</tr>
<tr>
<td>Kentucky</td>
<td>A</td>
<td>21</td>
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<tr>
<td>Tennessee</td>
<td>C</td>
<td>21</td>
</tr>
<tr>
<td>Indiana</td>
<td>D</td>
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<td>Louisiana</td>
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<td>20</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>C</td>
<td>20</td>
</tr>
<tr>
<td>South Dakota</td>
<td>B</td>
<td>19</td>
</tr>
<tr>
<td>Minnesota</td>
<td>A</td>
<td>17</td>
</tr>
<tr>
<td>New York</td>
<td>E</td>
<td>17</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>C</td>
<td>17</td>
</tr>
<tr>
<td>Alabama</td>
<td>A</td>
<td>16</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>A</td>
<td>16</td>
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<tr>
<td>Texas</td>
<td>C</td>
<td>16</td>
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<td>Washington</td>
<td>D</td>
<td>15</td>
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<td>Montana</td>
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<td>14</td>
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<tr>
<td>Nebraska</td>
<td>D</td>
<td>14</td>
</tr>
<tr>
<td>New Jersey</td>
<td>C</td>
<td>14</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>E</td>
<td>14</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>D</td>
<td>14</td>
</tr>
<tr>
<td>State</td>
<td>Grade</td>
<td>Score</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Connecticut</td>
<td>D</td>
<td>13</td>
</tr>
<tr>
<td>Georgia</td>
<td>C</td>
<td>12</td>
</tr>
<tr>
<td>North Carolina</td>
<td>A</td>
<td>12</td>
</tr>
<tr>
<td>Wyoming</td>
<td>A</td>
<td>11</td>
</tr>
<tr>
<td>Oregon</td>
<td>A</td>
<td>10</td>
</tr>
<tr>
<td>Nevada</td>
<td>A</td>
<td>8</td>
</tr>
<tr>
<td>Hawaii</td>
<td>C</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 7

The average state score was 23, and the median state score was 21, making the overall distribution positively skewed. Florida (41) had the highest state score, followed by Maine (40), Idaho (39), Massachusetts (37), and New Mexico/South Carolina (36) to round out the top five.

The Department of Defense's assessment that a state had enacted an accessibility policy correlated to form and website usability for central agencies, the presence of such a policy only correlated to form usability for licensing boards. An accessibility policy with respect to the Department of Defense's definition seemingly made no impact in discoverability or discoverability in the findings of this study, with most central agencies and licensing boards receiving a score of zero for discoverability.

Figure 5. Choropleth Map of Overall Scores
Central agencies slightly outperformed licensing boards in terms of having usable forms. In the thirty-three states the Department of Defense identified as meeting the best practice for military spouse occupational licensure access and having an accessibility policy, nineteen central agencies had a form that was at least somewhat usable, while fourteen did not. Of the seventeen states identified by the Department of Defense as not yet meeting the best practice for military spouse occupational licensure access and having an accessibility policy, seven central agencies had a somewhat usable form, while ten did not.

![Figure 6. Histogram of overall Accessibility Scores for 50 State Central Agencies and 50 State Architect Licensure Boards](image)

In the thirty-three states identified by the Department of Defense as meeting the best practice for military spouse occupational licensure access and having an accessibility policy, twenty licensing boards had a somewhat usable form, while thirteen did not. Of the seventeen states identified by the Department of Defense as not yet meeting the best practice for military spouse occupational licensure access and having an accessibility policy, seven licensing boards had a form that was at least somewhat usable, while ten did not.
Central agencies outperformed licensing boards in terms of having usable websites in states with an accessibility policy, but licensing boards outperformed central agencies in states without one. In the thirty-three states the Department of Defense identified as meeting the best practice for military spouse occupational licensure access and having an accessibility policy, twenty central agencies had a website that was at least somewhat usable, while thirteen did not.

Of the seventeen states identified by the Department of Defense as not meeting the best practice for military spouse occupational licensure access and having an accessibility policy, four agencies had a website that was at least somewhat usable, while thirteen did not. In the thirty-three states the Department of Defense identified as meeting the best practice for military spouse occupational licensure access and having an accessibility policy, nineteen licensing boards had a website that was at least somewhat usable, while fourteen did not. Of the seventeen states identified by the Department of Defense as not meeting the best practice for military spouse occupational licensure access and having an accessibility policy, ten licensing boards had a website that was at least somewhat usable, while seven did not. Further research is required to determine if higher levels of staffing or perceived closeness to high-level decision-makers in the Governor’s office and the legislature advantaged central agencies or if licensing boards were positively impacted by their smaller staffing, autonomy, and level of detachment when there is no clear overarching policy.

Licensing boards outperformed central agencies across the board on discoverability. In the thirty-three states the Department of Defense identified as meeting the best practice for military spouse occupational licensure access and having an accessibility policy, nineteen central agencies had a website that was at least somewhat discoverable, while fourteen did not. Of the seventeen states identified by the Department of Defense as not meeting the best practice for
military spouse occupational licensure access and having an accessibility policy, four agencies had a website that was at least somewhat discoverable, while thirteen did not. In the thirty-three states the Department of Defense identified as meeting the best practice for military spouse occupational licensure access and having an accessibility policy, twenty-one licensing boards had a website that was at least somewhat discoverable, while eleven did not. Of the seventeen states identified by the Department of Defense as not yet meeting the best practice for military spouse occupational licensure access and having accessibility, eleven licensing boards had a website that was at least somewhat discoverable, while only six did not. While it is logical for central agencies to support a military spouse licensing coordinator due to their size and funding, boards featured military-specific contact information far more frequently. It was only sometimes immediately clear if the individual was a dual-hatted board employee or a dedicated resource.

Licensing boards outperformed central agencies across the board on findability. Overall, central agencies and licensing boards struggled with findability. However, in the states that scored >1 for findability, the majority of central agencies (14 of 17 at least somewhat findable) and licensing boards (13 of 22 at least somewhat findable) had a score of three. In the thirty-three states the Department of Defense identified as meeting the best practice for military spouse occupational licensure access and having an accessibility policy, only fourteen central agencies had a website that was at least somewhat findable, while nineteen did not. Of the seventeen states identified by the Department of Defense as not yet meeting the best practice for military spouse occupational licensure access and having an accessibility policy, just three agencies had a website that was at least somewhat findable, while fourteen did not. In the thirty-three states the Department of Defense identified as meeting the best practice for military spouse occupational licensure access and having an accessibility policy, sixteen licensing boards had a website that
was at least somewhat findable, while seventeen did not. Of the seventeen states identified by the Department of Defense as not meeting the best practice for military spouse occupational licensure access and having an accessibility policy, six licensing boards had a website that was at least somewhat findable, while eleven did not. Usability and discoverability scores for the 50 central agency websites and 50 licensing boards showed no correlation to findability. The survey did not consider the implications of central agencies and boards having dedicated or contract staff who are talented designers with user experience backgrounds or who comply with guidelines to make licensing policies accessible.

![Scatterplot of relationship between Licensure Accessibility and Overall Legal Accommodations](image)

*Figure 7. Scatterplot of relationship between Licensure Accessibility and Overall Legal Accommodations*

The histogram shows that states with the most legal accommodations received a high accessibility score. However, there were some outliers, such as New Mexico and Washington, which were highly accessible relative to the limited number of legal accommodations they offer to spouses. These high accessibility, low accommodation states are juxtaposed against states
such as Mississippi, and Missouri, which are among the best states in making legal accommodations to military spouses, yet scored at or near the bottom for information accessibility. While these states all have a large military presence, the military population did not correlate to the findings, with top active-duty population states such as North Carolina scoring zero for accessibility (Defense Manpower Data Center, 2022). Maine, a state with one of the lowest active duty populations, received a perfect score (Ibid).

Figure 8. Visualization of Laws Available By State

Fifty-eight percent of states had enacted a license comity or reciprocity law. Research revealed that these laws varied widely by state, with different clauses on when agencies or boards “may” or “shall” issue licenses. Fifty-four percent of states had enacted a law to issue temporary licenses, with similar variations across states. Fifty percent of states had passed laws requiring licenses to be expedited. It was beyond the scope of the study to determine whether the expediting policy was actually taking place or the real-world outcome of the term "expediting." The research was limited to the existence of a policy and whether or not the policy had been made accessible. Seventy-six percent of states had passed a version of enhanced spouse license
portability for at least half of their licensed occupations. Sixty-six percent of states had an information accessibility policy in line with the Department of Defense’s definition of military spouse occupational licensure access (Department of Defense, 2022).

As the study was not focused on real-world outcomes, it was impossible to determine if board policies impacted the experience of military spouse architects. Further usability testing could be conducted to ascertain whether states with highly localized requirements made those requirements discoverable and findable on central agency and board websites and forms and if those websites and forms were usable using natural language processing.

While all central agencies and licensing boards are focused on the same problem regarding military spouse licensure, the laws differ between states, license policies vary by board and by occupation, and their websites are not all identical. At the macro level, states were similar
enough to group and adjudge statutory accommodations, board policies, usability, findability, and discoverability. While the highest scores do not necessarily indicate sites with superior usability, and the information studied does not provide any real-world survey of military spouse experience or licensing outcomes, high scores align with an observable, strong use of information design best practices in the areas evaluated. The research identified during the literature review, which suggests that information accessibility improves understanding, could mean that military spouse users benefit from information that is well designed by state central licensing agencies and licensing boards.

Figure 10. Scatterplot of Board Autonomy, Licensing Requirements and Information Accessibility By State.

States with total board autonomy tended to score the worst overall, with average performance increasing commensurate to the level of central agency involvement. In states with Regulatory Model A, the average overall score was 20, and the median was 21. The Model A state with the highest overall score was California (35). In states with Regulatory Model B, the average overall score was 29, and the median score was 32. The Model B state with the highest overall score was Missouri (35). In states with Regulatory Model C, the average overall score was 24, and the median score was 22. The Model C state with the highest overall score was
Florida. In states with Regulatory Model D, the average overall score was 23, and the median score was 20. The Model D state with the highest overall score was Massachusetts. In states with Regulatory Model E, the average overall score was 25, and the median score was 21. The Model E state with the highest overall score was Maine. Demographic factors did not play a large factor as both high-population and low-population states were distributed at the high and low end within each model.

![Accessibility by Regulatory Model](image)

**Figure 11. Licensure Accessibility by Regulatory Model**

Tableau was used to generate visualizations of the data collected, with the author relying heavily on the texts of Cairo, Katz, and Lidwell, to clearly articulate results and create representational delight for the viewer, communicate the findings effectively and help readers gain new insights from the data. It was important for the visualizations themselves to be accessible, and allowing the viewer to drill down using tool tips to evaluate the central agency or licensing board for themselves. The visualizations distill complex policies into easy to view
graphics which show the available laws, licensing restrictions, and accessibility elements, which addresses multiple aspects of the problem holistically in an understandable manner. Color, and state borders, are the visual elements used to provide granularity and a systematic means for analysis with clarity, efficiency, and precision. This exemplifies Katz's (2012) concept of communicating ideas without words.
| State         | Appendix A | Appendix B | Appendix C | Appendix D | Appendix E | Appendix F | Appendix G | Appendix H | Appendix I | Appendix J | Appendix K | Appendix L | Appendix M | Appendix N | Appendix O | Appendix P | Appendix Q | Appendix R | Appendix S | Appendix T | Appendix U | Appendix V | Appendix W | Appendix X | Appendix Y | Appendix Z |
|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
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i The questions were as follows: (1) Was the phrase “Military spouse” on the website?; (2) Did the website provide information pertaining to military spouse applicants? This information could be listed under “Military spouse,” “Veteran,” or “Military” links; and (3) Were military spouses’ license recognition, transfer, or reciprocity options displayed on the website? Each “yes” answer was given a numerical score of one.

ii See https://statepolicy.militaryonesource.mil/status-tracker/military-spouse-occupational-licensure-access for DoD’s evaluation of states which have enacted military spouse information accessibility statutes.