Data to Policy Change: Creating an Interactive Dashboard to Voice Youth Perspectives

Humphrey School Capstone Report

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Abstract (250 words or less):

The Dashboard Safety Index Project, in alignment with the 2022 YMB Annual Report and YCB's mission, aims to provide a continual platform empowering youth to express their perspectives for policymaking. This interactive tool fosters inclusivity and responsiveness by integrating youth voices into community safety and policy discussions. The project employs a comprehensive methodology, including multiple stakeholder perspectives, regional breakdowns, and alignment with UNICEF goal areas. Challenges such as missing data and inconsistencies in data collection are addressed, while recommendations for dashboard design and data collection prioritize user engagement and youth involvement. The project not only reflects a significant step towards inclusivity but also enhances the relevance and impact of public policies concerning youth safety, ultimately serving as a practical, user-centric tool for policy-makers and the community.

Project Overview:

Aligned with the objectives and goals outlined in the 2022 YMB Annual Report and YCB's mission, the Dashboard Safety Index Project emerges as a distinguished initiative. Its purpose is to embody the YMB's mission by providing a continual platform that empowers youth to express their perspectives for public policy specialists such as to secure grants and resources. This modern, interactive tool is designed to be universally accessible, facilitating engagement from the initial stages to the ongoing management of the project. Through its interactive elements, the project ensures that young voices are heard and integrated into broader discussions, thereby fostering a more inclusive and responsive approach to community safety and policy-making. While the dashboard is the ultimate product, this report advises that the YCB should leverage both the process and design of the project to be in harmony with the YCB's strategy. By doing so, it incorporates numerous engagement elements to fulfill the collaborative mandate. This strategy not only aligns the dashboard with the YCB's objectives but also amplifies the project's impact by fostering greater engagement and a sense of ownership among youth.

Transitioning from the conceptualization of the dashboard to its practical implementation, our approach was grounded in a thorough analysis of available data and a commitment to meaningful engagement. After extracting insights from the data, we conducted a literature review and engaged in team discussions to identify aspects of the data and our research that would yield the best results for an interactive dashboard. By inputting the previously collected data into Excel to visualize the data, we consistently returned to the fundamental principle that the quality of the dashboard depends on the quality of the data collected, and that its ongoing and sustainable success hinges on the process of engagement. With these considerations in mind, we developed a dashboard example that could seamlessly transition from Excel to Tableau using the existing data. Our focus then shifted to refining the dashboard with specific recommendations. These included defining the target audience to ensure the dashboard's content is relevant and engaging; implementing dynamic filtering and sorting to allow users to customize their data views; facilitating user-driven customization and accountability to enhance personal interaction with the data; and ensuring a responsive and multi-skilled design that performs well on various devices and accommodates users with different abilities. Additionally, we emphasized the importance of data collection recommendations: justifying the choice of data and involving youth in the process to ensure the data's relevance and accuracy; exploring innovative data collection methods to capture authentic youth perspectives; and giving back by

training youth in data visualization tools, thereby empowering them and acknowledging their contributions to the project. These steps are designed to enhance the dashboard's functionality and its impact on policy and community engagement.

Methodology:

The first step we took was to analyze the existing data to understand the types of questions asked and how they would shape the eventual design of the dashboard. We then conducted a thorough literature review to inform our data analysis approach. Drawing from existing research, we refined our understanding of youth engagement and safety perceptions, identifying key themes and considerations. Subsequently, leveraging the data provided by YCB, we meticulously analyzed and organized it to represent the diverse voices of youth. Through this process, we identified overarching themes encompassing various aspects of safety and inclusion, ensuring a comprehensive representation of youth perspectives. These themes were further categorized and structured to reflect the multifaceted nature of community safety and the nuanced needs of young individuals. By breaking down the data into constituent elements, we aimed to create a dashboard framework that not only captures the youth experiences but also provides actionable insights for policymakers and community stakeholders.

I. Multiple Stakeholder Perspectives:

The data provides a valuable opportunity to compare and contrast the perceptions of different demographic groups within the community, specifically through the lens of youth and their parents. For example, the youth surveyed responded to the statement "There are places where I feel welcomed and included" with a relatively positive average score of 7.23, suggesting a general sense of belonging and acceptance in certain community spaces. In contrast, parents rated the safety of play spaces outside their homes with a slightly lower score of 6.81, indicating a more cautious or critical perspective regarding the immediate environments for their children. This juxtaposition of youth and parent responses not only highlights differing perceptions between age groups but also provides a more comprehensive understanding of community sentiments. By analyzing such differences, stakeholders/policymakers can better address specific needs and concerns, potentially leading to more targeted and effective community planning and policies. These insights can enrich discussions on community development,

safety, and inclusivity, making them crucial for holistic community assessments and improvements.

II. Regional Breakdown:

The dataset provides a detailed regional breakdown of scores, particularly evident in responses to the question, "I feel safe in my community (protected from abuse, violence, and exploitation)." This question elicited varied responses across different regions within Minneapolis, with scores such as 6.25 in Camden, 5.81 in Near North, and a notably higher score of 8.64 in Longfellow. This geographic segmentation is immensely valuable for conducting spatial analysis and creating visual mappings of safety perceptions across using Geographic Information System (GIS). By presenting this data on an interactive dashboard, stakeholders can visually identify which areas report higher or lower feelings of safety. Furthermore, this level of localized insight helps tailor community programs and initiatives to address the unique challenges and needs of different areas, ensuring that resources are allocated efficiently and effectively to improve overall community wellbeing.

III. Detailed Survey Questions Aligned with Goal Areas:

The dataset includes responses to the question, "Children with disabilities are respected and given equal opportunities," which falls under the UNICEF goal area of Safety and Inclusion, scoring an average of 6.73. This metric provides a crucial insight into how well the community perceives the integration and treatment of children with disabilities. The alignment of this question with a specific UNICEF goal area allows for more focused tracking and analysis of targeted outcomes and initiatives. Including such specific, goal-oriented questions in a dashboard enhances its utility, making it a powerful tool for visualizing progress, facilitating discussions, and guiding policy decisions. This method ensures that initiatives aimed at enhancing safety and inclusion are not only monitored for effectiveness but also strategically guided by direct community feedback on specific, relevant issues.

IV. Missing Data:

One significant challenge in the dataset is the presence of missing data, particularly evident in the socio-economic categorization of responses. For example, in responses to the

question, "Children with disabilities are respected and given equal opportunities," there is a notable absence of data in the Upper Middle Class category across several entries. This absence limits the ability to perform a comprehensive and nuanced analysis that could reveal important insights into how different socio-economic groups perceive and experience issues related to equality and respect for children with disabilities. There are also missing data points for neighborhoods and ethnicities noted. When constructing dashboards or conducting statistical analysis, it's essential to address these gaps either by imputing missing values, where appropriate, or by clearly delineating these data limitations to users.

V. Inconsistencies in Data Collection:

In addressing inconsistencies in data collection, particularly with variation in data completeness, we observe a recurring issue in the dataset. For instance, regional scores for areas like Powderhorn and socio-economic categories such as Upper Middle Class frequently lack data across multiple survey questions. This pattern suggests potential inconsistencies in how data is collected or how response rates vary across different regions and socio-economic groups. Such discrepancies can significantly affect the reliability and interpretability of the data when developing insights or making decisions based on this information. It is crucial for any analysis or dashboard derived from this data to either account for these gaps through statistical methods or to clearly communicate these limitations to users to prevent misinterpretations. This focus ensures that conclusions drawn are not only accurate but also reflect a true representation of the community as a whole.

Literature Review:

I. Youth Engagement:

In the literature review for the Youth Safety Index Dashboard, the "No Wrong Door Youth Project: A Needs Assessment for the Hennepin County No Wrong Door Initiative" was cited as an exemplary model for inclusive data collection methods. This assessment, offers insightful examples of terminology and language that resonate with the youth, such as the use of phrases like "The life," "survival sex," "hustling," "the game," "sex work," and "prostitution." These terms are crucial for understanding the context in which youth describe their experiences with selling or trading sex, including situations of sex trafficking. This is relevant and crucial to this project,

as youth are knowledgeable about their terminology that fosters trust and provides a clear understanding of their experiences (Melander et al., 2019).

Furthermore, the assessment addresses significant aspects of youth survey methodologies, emphasizing the importance of compensating youth for their time to enhance participation rates and data reliability. The thoroughness in describing the linkages of youth to institutions provides a deeper layer of understanding beyond basic demographics. This approach in data collection not only enriches the data quality but also ensures that the resultant dashboard is more engaging and informative. By incorporating these detailed descriptors, the proposed safety index dashboard can offer a nuanced view of safety perceptions among youth, making it a more effective tool for policymakers and community leaders.

Another pivotal reference is the article "Effective Dashboard Design" by Sulliti & Suchi (2013). This article underscores the critical importance of selecting and visualizing the "right" data to construct a dashboard that is not only functional but truly useful to its users. The central thesis of the article argues against the common pitfall of overloading dashboards with excessive data merely to showcase technical capabilities or graphical sophistication. Instead, it advocates for a focused approach that prioritizes data relevance and appropriateness in achieving the dashboard's intended goals (Sulliti & Suchi, 2013).

The article's emphasis is on the importance of aligning dashboard design with user needs, ensuring that every piece of data displayed serves a clear purpose in decision-making or insight generation. This involves a meticulous selection process for data inclusion, which must be both relevant to the users' goals and presented in a way that is immediately comprehensible and actionable (Sulliti & Suchi, 2013). The discussion on choosing the "right" visualization technique further complements this approach by stressing that how information is presented can significantly affect user engagement and the effectiveness of the data in conveying the intended messages.

Incorporating these principles from the article into the Youth Safety Index Dashboard, the design must focus on data that directly impacts youth perceptions of safety and ensure that visualization techniques are selected based on their ability to clearly communicate this information to stakeholders. This approach ensures the dashboard is not just a collection of data points, but a strategic tool tailored to enhance understanding and foster informed decision-making regarding youth safety. In essence, youth know what youth data is important to visualize.

II. Qualitative and Quantitative Visualizations:

In the literature review, it seemed appropriate to acknowledge the foundational issues of visualizations as discussed in, "A Business Intelligence Dashboard Design Approach to Improve Data Analytics and Decision Making" (Orlovskyi & Kopp, 2020). This article is integral in framing the argument for a simpler, more straightforward approach to dashboard design, particularly in the context of visual features and interactivity. The article cites the work of Zach Gemignani et al., which emphasizes that visualization charts serve as the fundamental building blocks for dashboards (Orlovskyi & Kopp, 2020). It cautions against the selection of inappropriate visualizations that could potentially mislead the audience by directing their focus towards irrelevant data points. According to the article, the primary purpose of a chart should be to facilitate easy recognition of patterns and to enable straightforward comparisons between values (Orlovskyi & Kopp, 2020). This is best achieved through the use of two-dimensional visualizations like bar charts and line charts, which allow users to accurately judge values. In contrast, the article notes that pie charts are less effective due to the difficulties associated with comparing radial distances and areas (Orlovskyi & Kopp, 2020).

This source advocates for simplicity in dashboard design, suggesting that an overload of complex interactive features can detract from the user's ability to effectively analyze data. The preference for basic but powerful visualizations underscores a critical design philosophy: that clarity and ease of use should not be sacrificed in the pursuit of aesthetic appeal or technological showcase. This perspective is crucial for the design of the youth safety index dashboard, where the goal is to present clear, actionable insights without overwhelming the end-users.

Another critical source, "How to Tell Stories Using Visualization" highlights the importance of engaging storytelling techniques in data visualization, which are particularly effective for younger audiences accustomed to digital and social media platforms like TikTok and Instagram (Figueiras, 2014). Notably, the article discusses innovative visual formats such as video shorts and interactive content that can captivate users and encourage interaction with the data presented (Figueiras, 2014).

The inclusion of visual storytelling methods, such as word clouds and art submissions from youth, is emphasized as a way to make the dashboard not only informative but also relatable and engaging for its target audience. These techniques reflect the findings in the cited paper where certain visualizations like the New York Times' "How many households are like yours?" and The Guardian's "Death penalty in the US mapped" were particularly effective (Roberts, 2011; Rogers, 2011). These visualizations scored highly in comprehension, likeability,

and navigation, underscoring the potential for similar approaches in the Safety Index Dashboard.

Moreover, the article points out the importance of providing context for data, as users expressed a desire to understand the 'why' behind the data (Figueiras, 2014). This insight is crucial for the dashboard design, suggesting that incorporating links or explanations that provide background and context can enhance user engagement and understanding. By integrating these storytelling elements, the dashboard can do more than display data—it can tell a compelling story of youth safety perceptions, making it a powerful tool for advocacy and change.

Recommendations for Dashboard:

I. Define the Target Audience:

The dashboard needs to clearly define its target audience, ensuring the information is accessible to users with varied data interpretation skills. This endeavor is not just about simplifying the presentation but making it engaging and pertinent to the intended audience. Considering that youth are the primary focus of the data collection and the policies derived from this data will affect them, it's crucial for the dashboard to consider the types of engagement that resonate with young people. For instance, incorporating qualitative data through short videos akin to YouTube shorts or TikTok, or utilizing narrative formats similar to Instagram stories, could enhance engagement. This approach not only makes the content more relatable but also leverages platforms where youth already actively participate.

We believe that showcasing the data with youth as the focus is suitable for the usage from policy makers and community leaders without changing the dashboard. This will allow for the dashboard to showcase the needs of youth through the voices of youth. Recognizing the role of multiple stakeholders with the youth at the center makes the dashboard more transferable to different audiences.

II. Dynamic Filtering and Sorting:

Dynamic filters allow users to apply various filters or sort data based on different parameters such as demographic groups. This allows them to narrow down the data to what's most relevant to their needs or interests, tailoring their engagement experience. It is important to provide the ability to utilize dynamic filtering, offering the option to choose multiple filters at one time. This directly relates to the recommendation regarding dynamic data collection mentioned

below. Examples of dynamic filtering and sorting include categories, such as age, sex, gender, ethnicity/race, and neighborhood. While these filter options are more extensive than those captured in our data, identifying additional options allows for a better understanding of dynamic filtering. It would also be beneficial to support the selection of multiple filters at a time in order to capture the intersections of identity, such as ethnicity/race and class or ethnicity/race and gender, etc.

III. User-Driven Customization and Accountability:

Users can often customize what data they see and how it's presented. This could include selecting different chart types, changing the layout of the dashboard, or choosing which data points are displayed. Accessibility through interpretation of the same data through different formats, for example color or size or comparison. This type of customization allows for a personally tailored experience, which has the potential to increase interest in the information and comprehension of the material.

IV. Responsive and Multi-skilled Design:

An interactive dashboard is designed to be accessible and functional across different devices and screen sizes, offering a seamless user experience whether on desktop, tablet, or mobile. With this, it’s necessary that the data is accessible for all regardless of disability. For example, it is important that the visual images are vivid, rich, clear colors to support individuals with low-vision. By making sure that this data is accessible for all people makes sure that communities that may have been missed previously are able to access the information. Especially those whose needs are identified in the data utilized in the dashboard.

V. Inclusion of Resources:

Including access to various community resources through links on the interactive dashboard (Figure 4: Youth Participation Dashboard Framework) allows for direct access to programs and services that reflect the needs outlined in the dashboard data. This creates a direct path to opportunities for youth to receive support for any needs they may have in their communities. This is also where a feedback loop in the form of a quick 1-3 question survey could be placed to capture user experience.

Recommendations for Data Collection:

I. Justify the Data and Involve Youth:

Collaboratively determining and understanding the reasons behind the selection of each indicator from multiple sources: UNICEF provides various dashboard indices to aid public understanding. Globally, the urgent need for essential health services—including vaccines, clean drinking water, and education access—is evident. Although Minneapolis is not exempt from these worldwide safety challenges, YCB has opted to focus on different indicators. The selection process for these indicators should be transparent, clearly explaining the rationale behind their choice and the stakeholders involved, particularly the consultation of youth.

It is necessary for youth to be included throughout the entire process, but utmost during the data collection process. This could involve offering input when crafting survey questions, confirming what questions need to be included in the data collection method, and reaching a consensus on the use of language that resonates with youth. These are not exhaustive options, rather possible recommendations to be utilized.

II, Data Collection Methods:

Youth consultation is crucial, especially regarding how data will be collected—whether through platforms such as TikTok, Instagram, or Snapchat—and determining who will be responsible for data collection. These platforms provide a specific snapshot into the hopes, dreams and interests of youth in a specific, measurable way. They also create an opportunity for any quantitative data, such as the UNICEF data we used for our dashboard framework, to be coupled with qualitative data. While these methods are not typical of most data collection, thinking outside the box and utilizing these methods creates new opportunities from growth. Using platforms that youth are already familiar with creates a smoother introduction to the data when it is finally produced in the dashboard as well.

III, Give Back:

Offering training to youth on how to create dashboards using tools like Tableau, Adobe, or other data visualization software can make their involvement worthwhile. This not only compensates for their time but also equips them with valuable skills. Allowing youth to maintain

ownership of their data has the potential to increase investment in the project, and subsequently, the process in which the data will be used in the future by the Minneapolis Youth Coordinating Board, policy makers, government officials and beyond.

Conclusion:

The Dashboard Safety Index Project aligns seamlessly with the objectives outlined in the 2022 YMB Annual Report and the broader mission of the YCB. Through the development of this innovative and interactive tool, the project will successfully harness the power of youth voices, integrating their unique perspectives into the fabric of community safety and policy-making. This project not only reflects a significant step towards inclusivity but also enhances the relevance and impact of public policies concerning youth safety.

The systematic review and final report will help facilitate the creation of a dashboard that is not only a technological feat but a practical, user-centric tool that meets the needs of its primary audience—young individuals and policy makers. The engagement strategies employed, from the careful selection of relevant data to the inclusion of dynamic and accessible visual elements, underline the commitment to creating a dashboard that is not only informative but also engaging and accessible to a diverse audience.

Moreover, the project's design and report have been guided by a clear understanding of the strategic objectives of the YCB. By emphasizing a process that involves youth at every stage—conceptualization, design, data collection, and dissemination—the project will foster a sense of ownership among young people, ensuring that their insights are not just heard but are instrumental in shaping outcomes. This project will stand as a testament to the possibilities that emerge when technology meets civic engagement, and it should serve as a beacon for future endeavors aiming to merge these two critical domains effectively.

Index: Dashboard reference images:

Figure 1. Youth Safety Dashboard Framework

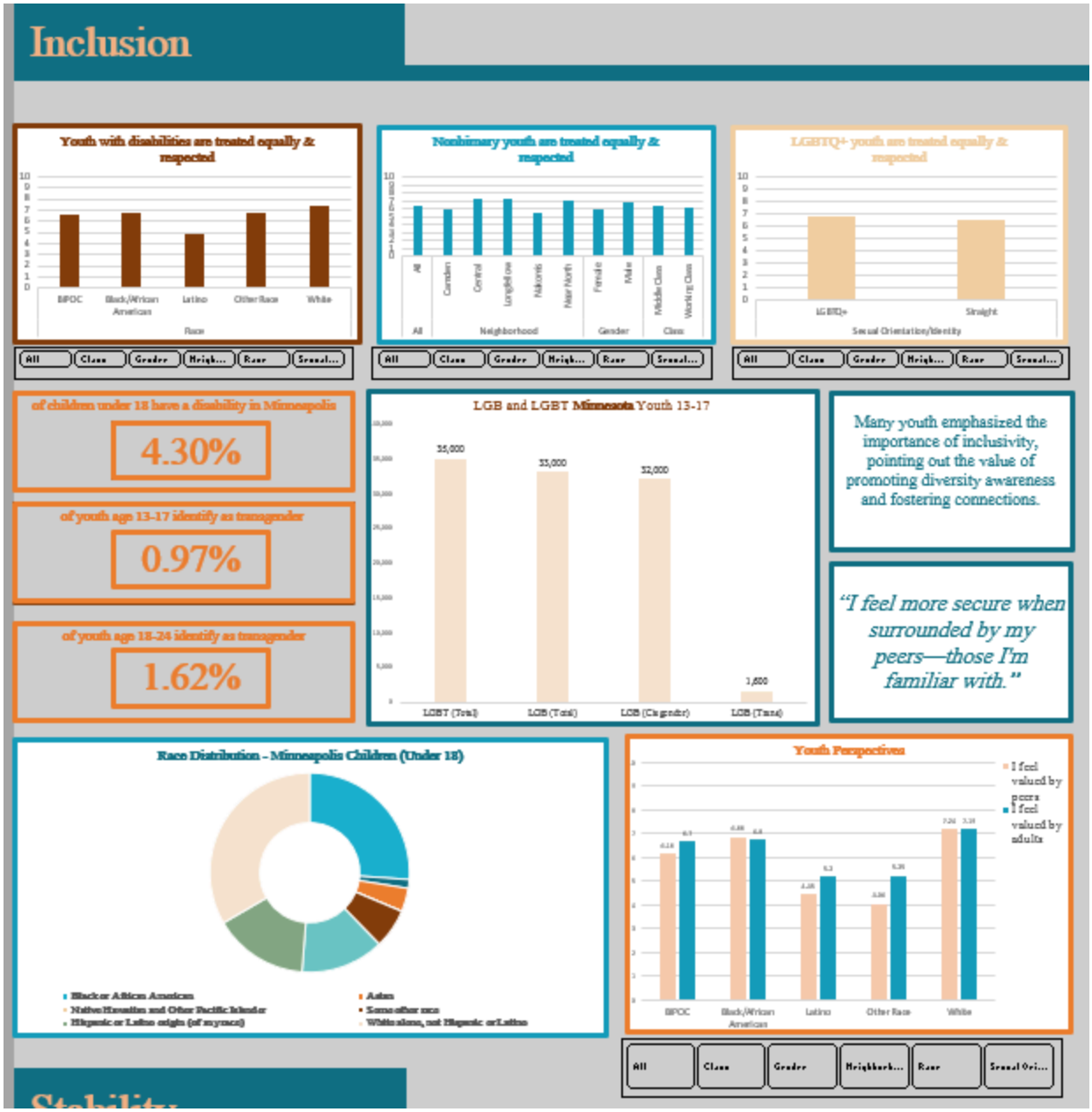


Figure 2. Youth Inclusion Dashboard Framework

Figure 3: Youth Stability Dashboard Framework

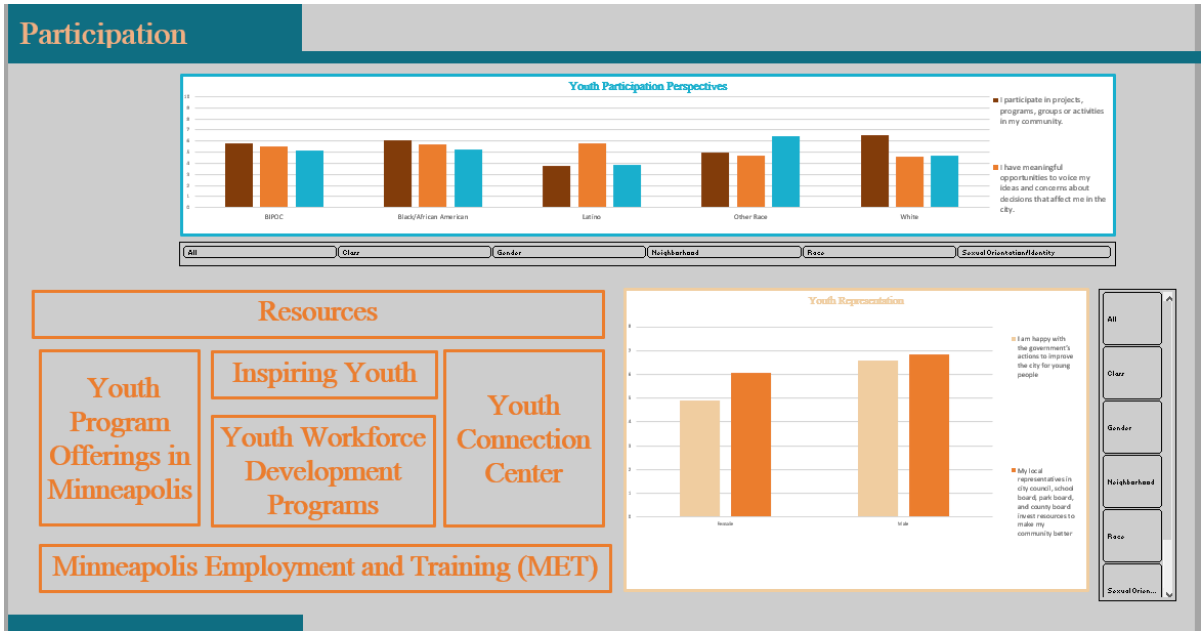
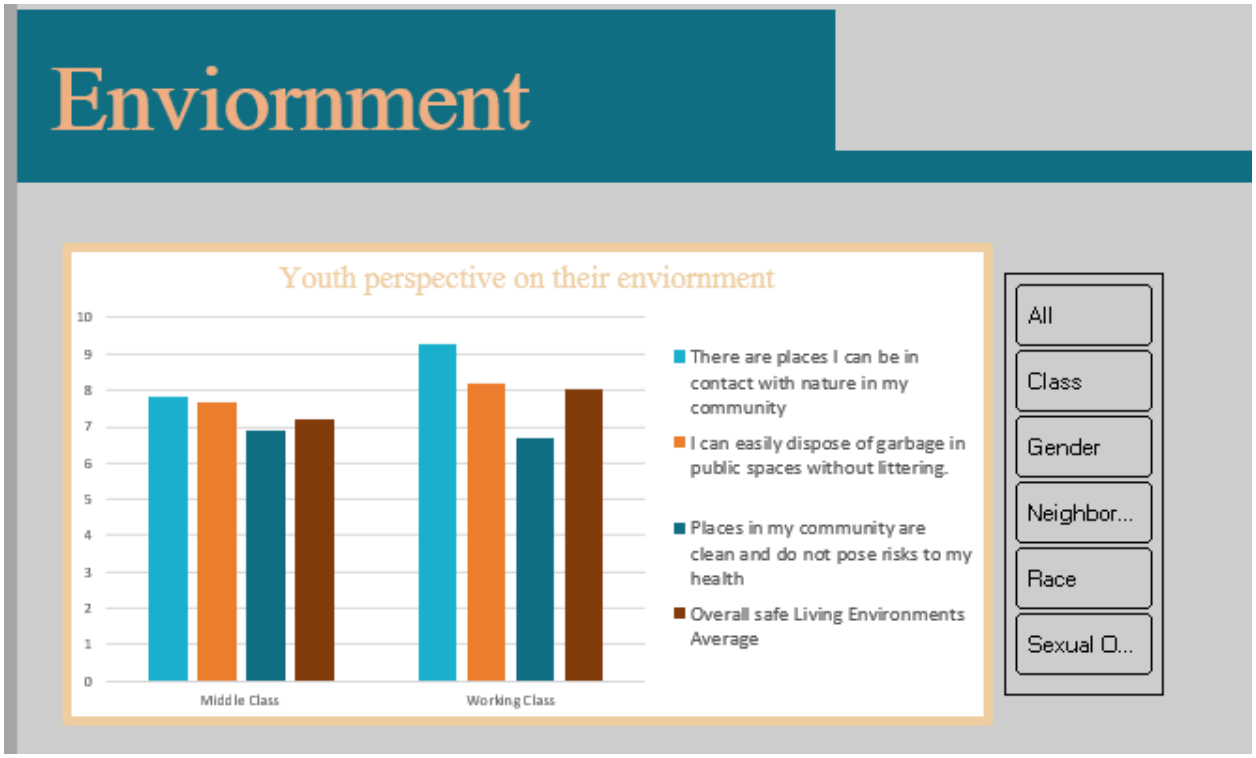


Figure 4: Youth Participation Dashboard Framework



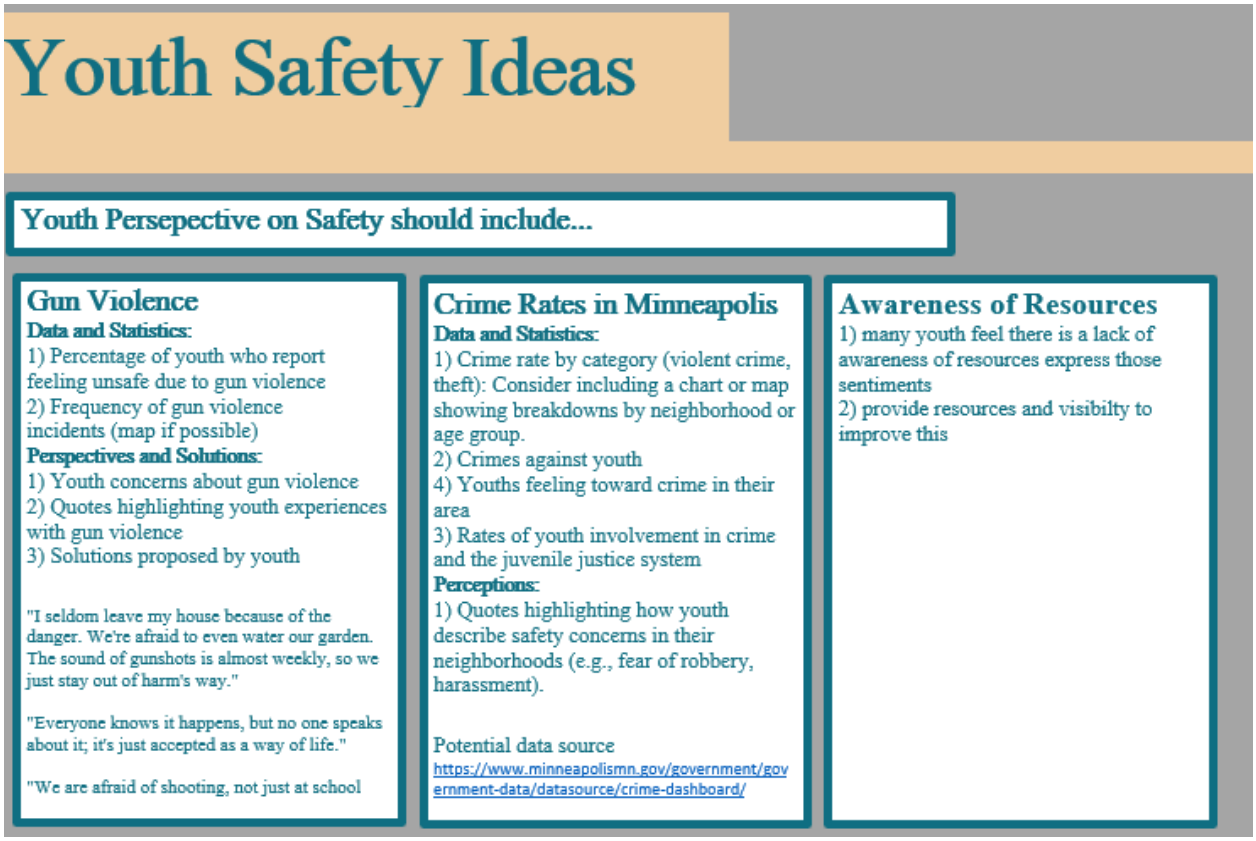


Figure 5: Youth Safety Ideas for Future Dashboard Development

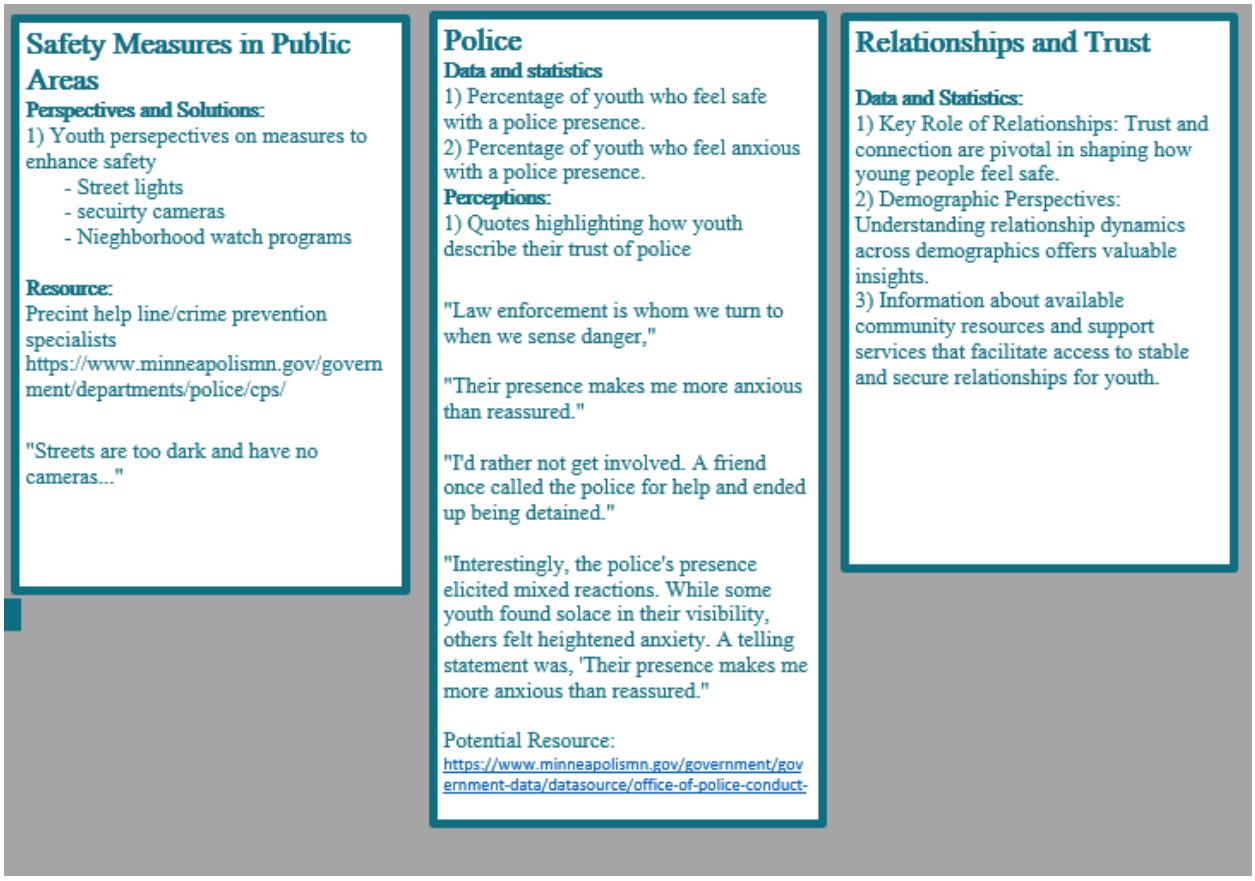


Figure 6: Youth Safety Ideas for Future Dashboard Development (2)

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