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Network participation in public health : the development of instruments and adapted theory to predict stakeholder participation in a public health network.

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NETWORK PARTICIPATION IN PUBLIC HEALTH:
THE DEVELOPMENT OF INSTRUMENTS AND ADAPTED THEORY TO PREDICT STAKEHOLDER PARTICIPATION IN A PUBLIC HEALTH NETWORK

By

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DEDICATION:

This dissertation is dedicated to my wife Richelle and our daughter Evelyn (Evie).

Without each of you, this would have never been possible.

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ABSTRACT

NETWORK PARTICIPATION IN PUBLIC HEALTH:
THE DEVELOPMENT OF INSTRUMENTS AND ADAPTED THEORY TO PREDICT STAKEHOLDER PARTICIPATION IN A PUBLIC HEALTH NETWORK

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Background: Participation in public health networks is important to achieve the goals of public health. This dissertation addresses a common problem in public health management—of how to measure support and predict participation by individuals and organizations in network level collaboratives—through testing an adapted theory producing a newly developed instrument.

Purpose: Community health collaboratives have grown in popularity and in funding opportunities in the past couple decades, but they notoriously fail to achieve measureable results. By adapting theory and relevant instruments to a specific public health network context, factors that enable and inhibit participation are identified.

Method: A prospective, theory-driven, sequential mixed-methods study was done involving both leaders and members of the Mayor's Healthy Hometown Movement of Louisville, Kentucky. Two interviews with key network leaders were conducted, along with a focus group of five other central network leaders. Qualitative data was used to adapt highly validated quantitative instruments to this specific network context, and the

survey was deployed to more than five thousand individuals on a network-specific listserve. Responses were entered into SPSS, where OLS regression analysis identifies variables correlated with intent to participate in the network for an identified participation opportunity. A second survey to assess actual participation was deployed 3 months later, and binary logistic regression was used to assess correlation with intent to participate.

Findings: Several factors were found to be statistically significant using the adapted quantitative instrument. The quantitative data collection obtained responses from 244 total respondents. Regression models were analyzed for two unique participation opportunity types—both of which involved the use of the Healthy Louisville Community Dashboard. For the first—visiting the community dashboard for information—the research identified 6 statistically significant independent variables and a maximum model fit (r^r) of .404. For the second—contributing content to the community dashboard—the research identified 5 statistically significant independent variables and a maximum model fit (r^r) of .273. A 70.1% response rate to the follow-up survey highlighted a positive and statistically significant correlation between intent to use the dashboard and actual dashboard use, for both visiting the dashboard for information and contributing content to the dashboard.

Conclusion: Use of adapted theory and instruments, adapted through the qualitative approach used in this research, produced a way to better understand and predict stakeholder intent to participate in this public health network, related to the identified participation opportunity. These results provide ways for network leadership to better understand network participants and their participation behaviors, as well as

provide a framework for future applications in public health and potentially other sectors, in both theory and practice.

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CHAPTER 1: INTRODUCTION

Statement of the problem

Health departments, like many other organizations and community groups (Butterfoss, Goodman, & Wandersman, 1996; Provan, Veazie, Staten, & Teufel-Shone, 2005), face challenges with getting community members involved and maintaining their involvement in *network-level collaboratives*, which are defined as a general form of network-level endeavors in which two or more individuals, organizations, or networks collaborate in order to achieve a shared goal (Thornewill, 2011). Community member engagement, such as the engagement of individuals, organizations, and supporting networks, is critical to initiatives like the Mayor's Healthy Hometown Movement (MHHM) in Louisville, Kentucky, and as such it is important to understand factors associated with these stakeholders' intent to participate, and their actual participation. The MHHM has been in the Louisville community for a decade, and has worked to develop a structured network of individuals, organizations, and networks, focused on public and community health efforts. The efforts of this network have recently produced a strategic plan, called *Healthy Louisville 2020*, closely modeled after the goals outlined in the national Healthy People 2020 strategic plan (Metro, 2014), though specific to the needs of the local community. The creation of this strategic plan has created *participation opportunities*—that is an opportunity, or opportunities, for individuals, organizations, and/or entire networks to participate in helping a network achieve its goals—which will

need support for the plan's adoption and implementation. Healthy Louisville 2020 was unveiled to the public on February 19, 2014.

The main problem addressed through this project is the one of understanding stakeholder intent to participate and actual participation in health-related network level collaboratives (NLCs). This problem, in the context of a public health prevention network such as MHHM, has never been addressed through the lens of *Network Participation Theory*, a relatively new theoretical framework that incorporates elements of several well established theories, including: whole networks theory, the technology acceptance model (or TAM theory) and subsequent unified theory of acceptance and use of technology (or UTAUT), and the theory of planned behavior.

The area of research that focuses on networks, such as participation opportunities and stakeholder intentions is a large and growing field of study (Provan & Lemaire, 2012), and there are many opportunities to test models designed to predict stakeholder intentions to participate and continue participation, such as with the MHHM. Understanding stakeholders' intent to participate using a new theoretical approach, has potential to help the Louisville Metro Department of Public Health and Wellness maintain current relationships in this NLC, or forge new relationships with new community members, organizations, or other networks, by identifying important factors related to participation.

Purpose of the Study

The purpose of this research is to better understand the contributing factors which influence participation within NLCs, with a focus on predictive measures related to stakeholder intent to participate and their actual participation. This research project draws on source theories to develop an adapted theory, uses qualitative data collection to identify participation opportunities that exist with the adoption of a new strategic plan, develops an adapted instrument to measure stakeholder intent to participate in the context of a public health-related network and administers the developed instrument to a sample of the population.

The source theories include: Ajzen's Theory of Planned Behavior (TPB), Venkatesh's Unified Theory of Acceptance and Use of Technology (UTAUT), Provan's Whole Network Theory (WNT), and Thornewill's Network Participation Theory (NPT). The adapted quantitative instrument is developed from the framework of the Unified Theory of Acceptance and Use of Technology (UTAUT) instrument, but informed through qualitative data collected through a series of interviews and focus groups with current MHHM leadership. The survey instrument measures a series of factors, and identifies statistically significant correlations related to stakeholder intentions to participate.

This research addresses a gap in the literature related to source theories and existing instruments, as they have not been adapted for community-based networks such as the Mayor's Healthy Hometown Movement, and participation opportunities such as those created with the adoption of its 5-year strategic plan, *Healthy Louisville 2020*. The

goal of this project is to move theory and understanding forward to address this gap in the literature.

Causal Model

The causal model developed for this research, shown in Figure 1, is adapted from several source theories, including: the Unified Theory of Acceptance of User Technology, Network Participation Theory, Whole Network Theory, and the Theory of Planned Behavior. This new and adapted theory for the context of a community coalition, and in particular, a network focused on public health activities, has yet to be tested. However, attributes of the adapted theory are well grounded in the literature, and empirical testing of theory related to this kind of network addresses a specific gap in the literature.

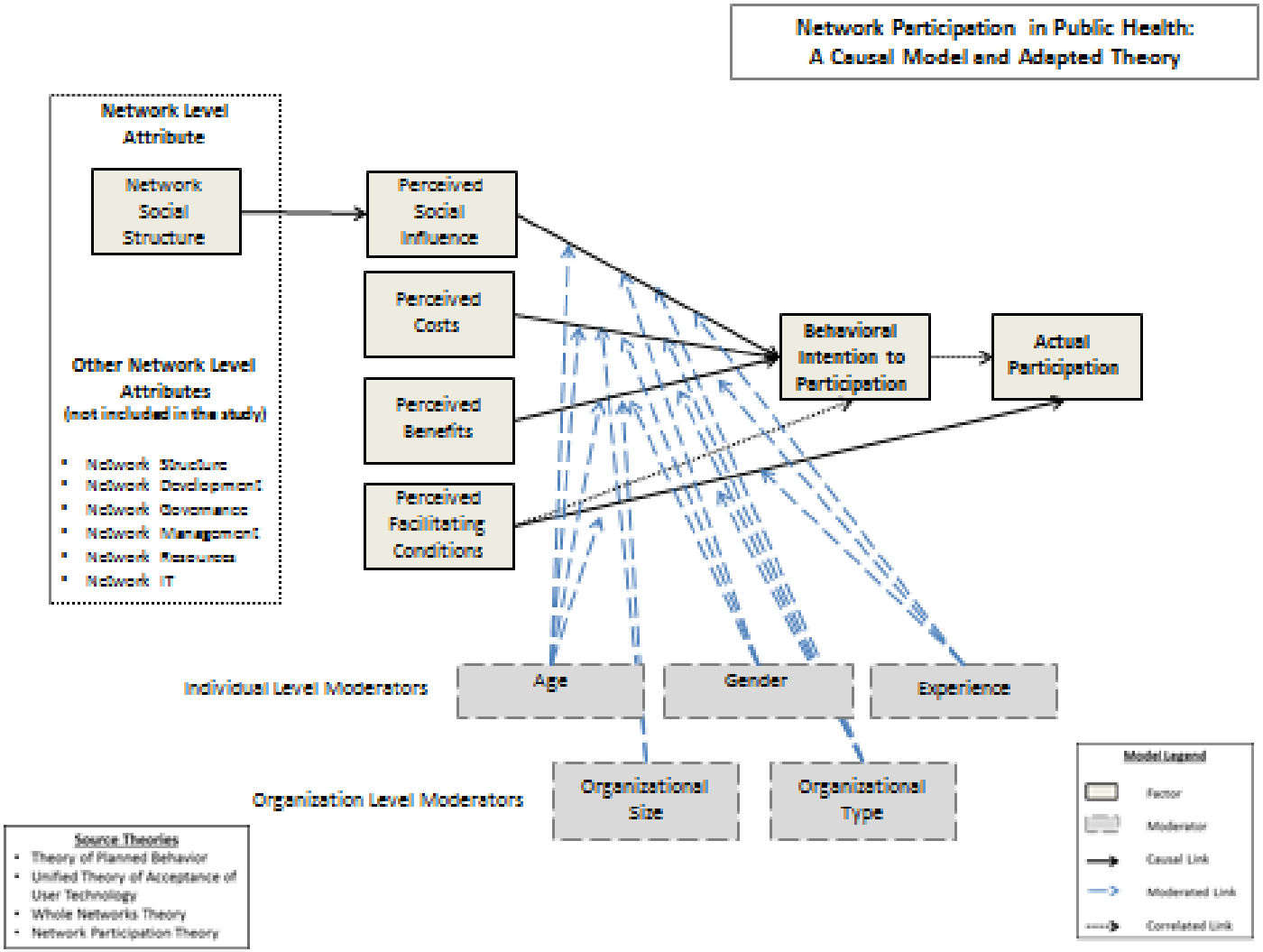

Figure 1: Proposed Causal Mode

This proposed causal model is most similar in structure to the one developed for Network Participation Theory (Thornewill, 2011), while the portion of the model which focus on predictors of intent to participate, is most similar to the structure developed for UTAUT (Venkatesh, Morris, Davis, & Davis, 2003). Additionally, network level attributes, identified in NPT (Thornewill, 2011) and through the interorganizational network literature (Provan, Fish, & Sydow, 2007) have been included in the model and positioned to reflect their influence on individual perceptions. Only one network level attribute has been included in this adapted model, specific to this research- network social structure - which will be tested for a causal link with perceived social influence, and sub sequentially intent to participate.

The hypothesized chain of causes and effects for this model follows closely with one that can be expected for scenarios employing the Theory of Planned Behavior, whereby individual beliefs will influence a behavioral intention, which can be correlated with the actual expression of a behavior (Ajzen, 1991). The predictors in this adapted model mirror closely those in UTAUT, including: performance expectancy, effort expectancy, social influence, and facilitating conditions. However, as indicated in the work of Thornewill, 2011, with the development of NPT, this model relates performance expectancy as perceived benefits, and effort expectancy as perceived costs. This formulation of naming convention is more consistent with participation, as opposed to use of technology.

These four primary factors of interest: perceived benefits, perceived costs, social influence, and facilitating conditions, are all important predictors of participation. These variables are influenced by several moderators, at both the level of the individual and the

level of the organization. This multileveled model follows the literature and Whole Network Theory, which indicates the influence of structural factors such as network socil structure, that are inherent to Whole Networks (Provan et al., 2007; Provan & Lemaire, 2012; Provan & Milward, 1995). Individual-level moderators indicated in the model include age, gender, and experience, which moderate independently on the causal links between the four aforementioned factors and behavioral intent to participate, which acts as the dependent variable of primary interest within the model. Causality between behavioral intent and actual behavior has been found to be highly correlated in a multitude of studies **(**Armitage & Conner, 2001), but as it relates to participation in this context, this correlation and/or causality has yet to be determined.

The following statement summarizes the adapted causal model for the assessment of network participation in public health, to be tested with the MHHM:

> Given opportunities to participate within an identified network, four key factors predict an individual's intent to participate within said network, and these are perceived costs, perceived benefits, perceived social influence, and perceived/real facilitating conditions. These are moderated by the following moderators: age, gender, experience participating in network-level collaboratives, as well as the organizational size and type for which an individual is affiliated. In addition, the presence of an identifiable and quantifiable network social structure is hypothesized to affect perceived social influence. Finally, behavioral intent to participate is hypothesized to correlate with actual participation.

Research Questions

1. Can the adapted theory and causal model be used to predict stakeholder intent to participate within the Mayor's Healthy Hometown Movement?
2. Can an instrument be developed to gather data that is both valid and relevant in explaining the variation observed in this network as it relates to stakeholder intent to participate?
3. Assuming questions one and two are answered through the research, what factors are found to correlate with actual participation in the network?

Hypotheses to be Tested

With all else being equal:

1. As perceived social influence increases, intent to participate will increase.
2. As perceived benefits increase, intent to participate will increase.
3. As perceived costs decrease, intent to participate will increase.
4. As facilitating conditions increase, intent to participate will increase.
5. As centrality in the network increases, perceived social influence will increase.
6. As behavioral intent to participate increases, actual participation will increase.

Definitions and Terms

Below is a list of significant terms and associated definitions related to the study. This list is not exhaustive; however it does attempt to be comprehensive enough to inform readers with only moderate familiarity with the field of network analysis:

Theory of Planned Behavior (TPB) – Theory developed in psychology which highlights the link between beliefs and behaviors. The theory states that a person's behavioral intentions and actual behavior can be predicted through assessment of attitude, subjective normative beliefs, and perceived behavioral control.

Network Level Collaborative (NLC) – A general form of network-level endeavor in which two or more individuals, organizations, or networks collaborate in order to achieve a shared goal.

Interorganizational System (IOS) – An information system (IS) used by two or more organizations to gather or exchange electronic information.

Organization Sciences – The area of study concerned with the study of organizations, organizational dynamics, and the processes that create institutions which shape social relations and influence people.

Public Health – The field of study concerned with population health as both an art and science, with a focus on promoting health, preventing disease, and prolonging life through the organized efforts of society (Winslow, 1926).

Louisville Metro Department of Public Health and Wellness (LMDPHW) – The local public health department responsible for the jurisdiction of Louisville, Kentucky. Only

5% of all health departments serve populations of over 500K (NACCHO, 2009), and this health department serves over 700,000 residents.

The Mayor's Healthy Hometown Movement (MHHM) – A local network of government, private, and nonprofit agencies and professionals that seek to improve the health of Louisville residents through a health-in-all-policies approach.

Network – Any combination of three or more individuals, organizations, or networks, working together to achieve a common purpose

Mixed Network – A network level collaborative involving participants drawn from two or more levels, such as an individual, organizational, and network level.

Network Social Structure– The organization and distribution of individuals in a network setting, as measured by centrality, or one's number of relationships to other individuals in the network.

Interorganizational Network at the Network Level (Whole Networks) – A formal network of three or more organizations collaborating to achieve a shared goal (Provan et al., 2007).

Dual Network Participation Theory (DNPT) – A theory developed in 2011, designed to predict factors which affect participation in dual networks like health information exchange networks (Thornewill, 2011).

Network Participation Theory (NPT) – An updated version of dual network participation theory, which focuses on factors affecting participation in network level collaboratives, rather than dual networks (Thornewill, 2011).

Participation – The act of taking part in something, best defined by the network of study (Butterfoss et al., 1996)

Unified Theory of Acceptance and Use of Technology (UTAUT) – A theory and instrument refined from the TAM model and adapted to include elements of the TPB, ultimately achieving an r^2 of .70 (Venkatesh et al., 2003).

Community-based Research – A collaborative approach to research that equitably involves community members and groups, such as individuals, organizations, and/or faith-based institutions in all aspects of the research process (Israel, Schulz, Parker, & Becker, 1998).

Participation Opportunity – An opportunity for individuals, organizations, and/or entire networks to able to participate in helping a network achieve its goals

Community Coalition – Industry standard term for a network-level collaboration in public health

Technology Acceptance Model (TAM) – A theory that studies models which are predictive for the adoption of information technology by individuals in organizational settings.

Alliance – A synonym for network

Partnership – Collaboration of two individuals, or two organizations, or two networks

National Prevention Council – Formed through legislation included in the Affordable Care Act, it is a council of over 20 federal agencies, chaired by the Surgeon General, with a focus on a health-in-all policies approach.

National Prevention Strategy – The strategic plan developed by the National Prevention Council.

Health-in-All-Policies (HiAP) – A collaborative approach to improve population health by incorporating health considerations into policies and decisions across all sectors (PHI, 2014).

Limitations

There are some notable limitations to the study. First, this type of analysis assessing participation and the potential for predictive instruments has, to the author's knowledge, never been conducted using this specific theoretical framework and instrumentation. This infers that there is limited research with which to compare the results of this project, however, this is also an opportunity for the study as it addresses a specific gap in the literature.

Another limitation of the study is the political framework and timing involved with the project. The year in which the data collection was conducted, 2014-2015, was a mayoral election year in Louisville, Kentucky. As such, the network of focus, which is strongly tied to the Louisville Metro government, could have experienced confounding or other external influence from this political process. To address this latter limitation, the tentative timeline for data collection was, when possible, expedited to finish the collection procedures before any potential leadership turnover occurred.

Delimitations

The first delimitation associated with this research has to do with the way in which the network has been defined. The network boundaries for this study were set with consideration for the network bounding problem (Laumann, Marsden, & Prensky, 1989); they were selected through expert opinion and personal familiarity with both the city and network context of interest. This method for defining network boundaries is consistent with network literature (Laumann et al., 1989; Provan et al., 2007). Related to this is the context in which the study is being conducted, mainly, studying one specific network, which limits the study in terms of generalizability. This study focuses on intent to participate for individuals already at least tangentially associated with the network, and hence, this study will exclude an assessment of intent to participate by individuals unaffiliated with MHHM.

Other factors intentionally left out of this study include measures of several known network level attributes, such as: network structure, network development, network governance, and network resources (Provan et al., 2007). For the purpose of this study, only one network level attribute is included in the causal model and will be measured—network social structure.

The final delimitation of the study is the exclusion of network level moderators. This study design, in which only one network is observed, eliminates the possible measure of moderators that may exist as the result of network level moderators influencing or moderating causal links between multiple networks of interest.

Significance of the Study

The significance of this study lies in its new approach to addressing an important problem. To date, NPT has only been applied to one context, namely Health Information Exchange Networks, where it appeared to have value in predicting stakeholder intent to participate. Although NPT has not been used in context with primary empirical data, it could be used as a theoretical model to gauge community stakeholder intent to participate in community-focused networks, and may offer much of the same predictive value. With more and more network-level collaboratives being funded in health-related areas (ACA, 2010), it is increasingly important to identify which models will be successful. Building network-level collaborative processes takes valuable time and resources, and it is becoming increasingly important to make sure that these resources are being used wisely.

NLCs, or community coalitions as they are referred to in the realm and discipline of public health, have garnered more support in recent years as a viable solution to addressing community-level health issues (Israel et al., 1998). This is evident in the language of the Patient Protection and Affordable Care Act, in particular with the creation of the National Prevention Council, which comprises 20 federal departments and agencies, and is chaired by the Surgeon General. The strategic plan developed by this council heavily reflects the HiAP approach to improving health.

In Louisville, Kentucky, the MHHM has been reorganized in recent years to reflect the structure, values, and strategy of this National Prevention Council and its efforts. Not only is this an opportunity to test adapted theory similar to NPT in a new,

community-focused context, but it is also a chance to better understand a local iteration of this national endeavor. This project has the potential to better understand how this national strategy and public health policy can be implemented on a smaller scale, and identify whether NPT is an appropriate theoretical framework through which to assess this application. It also has the potential to identify whether this adapted theory can predict stakeholder intent to participate, given the participation opportunities presented by the new strategic plan, Healthy Louisville 2020.

Lastly, the current body of knowledge is not well developed in the application of whole networks theory and UTAUT language to community-based networks, such as those in public health. This study has a great opportunity to bridge the disciplines of organization sciences and information systems, respectively, to public health by defining the observed phenomena in ways that will be beneficial to each body of knowledge. NPT itself has endeavored to bridge some of these interdisciplinary language differences in theory, and it is this researcher's opinion that these efforts would be highly applicable to public health networks and practice, which are highly interdisciplinary in of themselves.

Organization of Dissertation

The remainder of this dissertation is organized into the following sections: a literature review, the methodology for the research, results, discussion, limitations and implications for future research, and the conclusion. The literature review explores the theoretical foundation for the research, and is divided into several sections that explore each of the related theories. In addition to the theory, the review highlights networks in

the context of public health, and an analysis of the Mayor's Healthy Hometown Movement, the network of study. The methods section is similarly divided into subsections, reflecting the sequential mixed-methods study design. The research design itself, the variables used in the analysis, and the target population and sample, precedes separate sections detailing the qualitative and quantitative research methods, respectively.

CHAPTER 2: REVIEW OF THE LITERATURE

Literature Review Search and Methodology

The literature review was conducted using Web of Science as the primary database for the search. Terms for the search included main concepts and top cited authors in several disciplines, including organizational science, information systems, sociology and psychology, and the public health literature with a focus on community coalition studies. A comprehensive list of search terms, as divided by specific disciplines, is included in the appendices.

Introduction to the Literature Review

The theoretical perspective for this project stems from the work of Dr. Judah Thornewill, and his development of Network Participation Theory, which helped to explain some of the phenomena observed in Health Information Exchange Networks, including predictive values with respect to the intentions to participate in these networks by individuals, organizations, and networks. This theory was developed from several bodies of literature and independent theories. These include: Whole Networks Theory, from the Organizational Sciences literature; Technology Acceptance Model, from the Information Systems literature; and the Theory of Planned Behavior, from both sociology and psychology bodies of knowledge. The causal model for the adapted theory has been

adapted from the UTAUT model, the most current iteration of the TAM theory. The basic structure of the UTAUT model has been combined with critical elements of NPT, including a multi-level perspective including both individual and organizational moderating elements, as well as much of the language that NPT uses to classify factors. Azjen's Theory of Planned Behavior and Davis' Technology Acceptance Model follow a similar line of causality whereby individual perceptions affect behavioral intentions. This was hypothesized to be an effective causal link in Health Information Exchanges that also affects individual *intent to participate*, in Thornewill's Network Participation Theory (Thornewill, 2011). It is from these theories that an adapted theory, applicable to community coalitions and other networks within Public Health, which is adapted to form a causality model for community coalition participation. Through this causality model, further understanding will be generated to predict stakeholder intent to participate within these contexts. With the sampling of individuals in this setting, it becomes clear the extent to which the organizations and networks the individuals represent, affect their individual intent to participate. These observed phenomenon can be articulated using the language of Provan's Whole Network Theory, something which has not been done in the community coalition literature, less a few recent publications (D. Varda, Shoup, & Miller, 2012; D. M. Varda, 2011).

In addition to these source theories, the highly validated Unified Theory of Acceptance and Use of Technology, or UTAUT theory and quantitative instrument is adapted for the network of interest. Venkatesh developed the UTAUT instrument based upon a series of experiments testing various theoretical models, including a hybridized theory of TPB and TAM known as UTAUT. This produced the highest r^2 value of .70

(Venkatesh et al., 2003). The instrument, a survey that uses 31 items to estimate user acceptance of technology, may produce results which can be interpreted differently, as it is specifically adapted for a community coalition context and pertains to intent to participate within the network. To achieve high levels of methodological rigor, an extensive literature review of affiliated fields of study has been conducted, which will inform the adaptation of theory and the adaptation of the UTAUT instrument to this context.

Network Participation Theory

Network Participation Theory was developed through the dissertation work of Dr. Judah Thornewill in 2011. This theory was the product of an exploratory, retrospective study which examined factors that influenced stakeholder participation within Health Information Exchange Networks (HIENs). The methodology used to develop NPT included the development of survey questions related to source theories, which were then answered retrospectively by experts familiar with the stakeholders, generating opinions and responses to represent key stakeholders in defined HIEN settings. NPT built upon UTAUT and Azjen's Theory of Planned Behavior to include elements of Whole Network Theory. These elements included the individual and organizational moderating factors, as well as attributes of whole networks that affect the predictors of intent to participate; perceived costs, perceived benefits, perceived social influence, and perceived facilitating conditions (Thornewill, 2011).

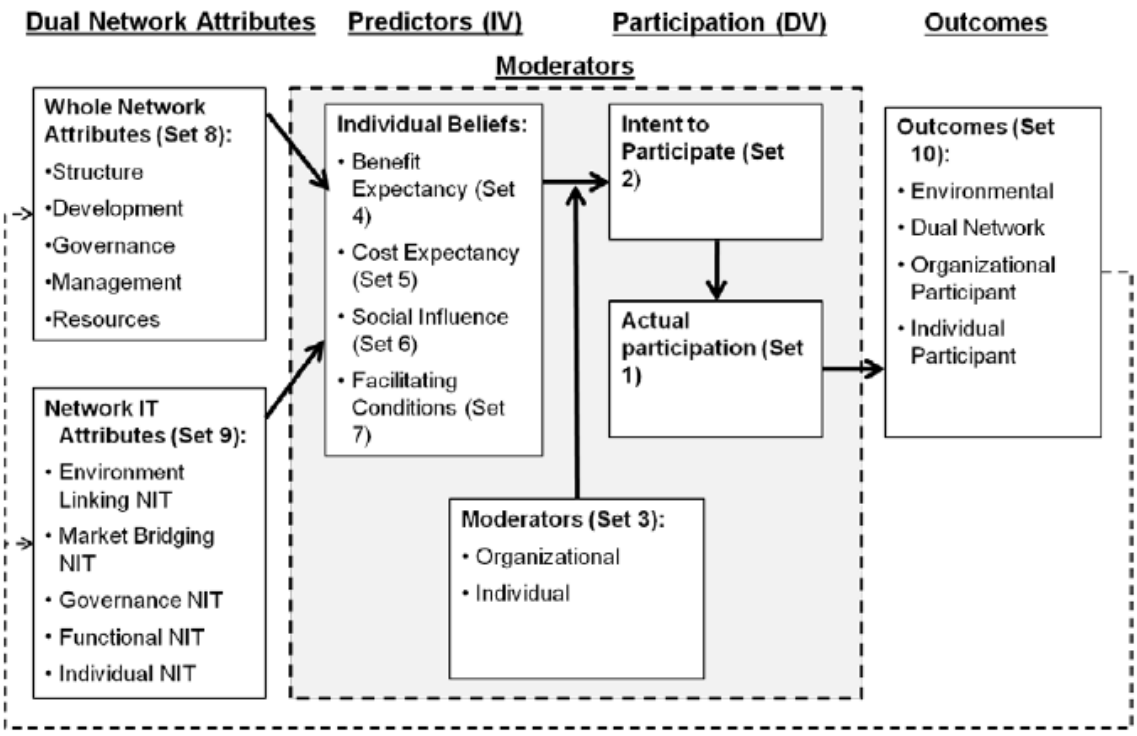

Figure 2: Network Participation Theory, Copied from Thornewill 2011.

The UTAUT causal model and instrument were central to the development of NPT, but NPT addressed a gap in the literature related to a lack of theory and instrumentation related to predictive value for participation in networks (Thornewill, 2011). UTAUT has been found to be highly predictive of individual adoption of technology in organizational settings (Venkatesh et al., 2003). It has since been used in a myriad of studies related to technology acceptance (Venkatesh, 2013; Venkatesh & Bala, 2012; Venkatesh, Thong, & Xu, 2012), but the theory and its utility toward predictive capacity related to stakeholder participation remain largely untested outside of NPT.

Information Systems

The field of information systems is important to this dissertation and research for several reasons. First, the Technology Acceptance Model is an application of the Theory of Planned Behavior that has been found to be predictive of intent to use technology (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989), and in particular in the most recent evolution of the theory by the work of Venkatesh et al. in the development of the Unified Theory of the Acceptance and Use of Technology, or UTAUT (Venkatesh et al., 2003). In this latter study, an empirical comparison of eight models using separate theoretical frameworks was used to assess longitudinal studies of four organizations and individuals' adoption of IT. Ultimately, the predictive capacity for the hybrid UTAUT model maintained the highest r^2 value, measured at .70, whereas the r^2 value of the earlier TAM study equaled .51 (Davis et al., 1989).

Individual Technology Acceptance – Technology Adoption Model (TAM) Literature and the Theory of Planned Behavior

The TAM literature is an important contribution to research in the Information Systems literature (Venkatesh & Davis, 2000). TAM was built upon the theoretical framework of the Theory of Reasoned Action with modification, and empirically tested the two theories using a population of MBA students and their adoption of a word processing program using a questionnaire. The researchers administered the 4-item

instrument to students immediately after introduction to the program, and then again 14 weeks later. Ultimately, Davis et al. found that TAM was a better predictor of technology adoption relative to TRA in this context (Davis et al., 1989). After the publishing of the TAM theory in 1989, it went on to be used in a myriad of studies which centered on individual technology acceptance and use, including: use of individual websites (Lin & Lu, 2000); use of telemedicine technology (Chau & Hu, 2002); online commerce (Gefen, Karahanna, & Straub, 2003; Gefen & Straub, 2004; Vijayasarathy, 2004); mobile device internet usage (Bruner & Kumar, 2005; Nysveen, Pedersen, & Thorbjornsen, 2005); and others, including meta-analyses of TAM implications and applications (Liu, Wei, & Chen, 2010; Schepers & Wetzels, 2007; Sumak, Hericko, & Pusnik, 2011; Wu, Zhao, Zhu, Tan, & Zheng, 2011; Zhang, Zhu, & Liu, 2012).

The theories in which TAM, and subsequently UTAUT, were grounded include the Theory of Reasoned Action and the Theory of Planned behavior. In 1977, Albert Bandura of Stanford University published the first among a series of seminal papers on the nature and measurement of self-efficacy and human agency (Bandura, 1977). He refined his findings further in 1982 with a series of experiments which gauged participant perceived self-efficacy and response to a variety of real-world stimuli and decisions which produced interactive effects of efficacy and response outcome expectations on behaviors (Bandura, 1982). In 1989, Bandura made perhaps his most significant theoretical contribution with the refinement of earlier studies into the Social Cognitive Theory (SCT), which is the triadic reciprocal determinism between behavioral factors, personal factors, and environmental factors. When assessed together, SCT can be predictive of human behavior (Bandura, 1989).

During this same time period in the 1980's and into the early 90's, Icek Ajzen was working on a similar theoretical framework which sought to explain and predict behavioral intentions. In 1986, Ajzen published the prelude to a seminal paper which outlined goal-directed behavior looking at a series of factors, including attitude, intention, and the perception of control over one's behavior (Ajzen & Madden, 1986). This set the stage for his greatest theoretical contribution, the Theory of Planned Behavior (TPB). This theory served as the foundation of TAM, and a myriad of others in the social sciences. TPB is slightly different than SCT, however both seek to explain and predict human behavior. Here, attitude toward a behavior, subjective norms, and perceived behavioral control interact with one another to produce a behavioral intention (Ajzen, 1991), which is correlated with the actual behavior. The application of TPB has taken many forms, including: weight-loss (Schifter & Ajzen, 1985); predicting dishonesty and unethical actions (Beck & Ajzen, 1991); condom use and safer sex practices (White, Terry, & Hogg, 1994); smoking cessation (Norman, Bell, & Conner, 1999); and the adoption and use of electronic commerce platforms (Pavlou & Fygenson, 2006). Perhaps the most foundational of each of these theories, however, is the Theory of Reasoned Action (TRA), which was developed by Martin Fishbein and Icek Ajzen in the 1970's. Over a series of several papers, these researchers conducted independent studies and highlighted the interactions of attitudinal and normative variables, and the ability to predict behaviors through this analysis (Ajzen & Fishbein, 1970, 1973; Fishbein & Ajzen, 1972, 1974). Their work culminated in 1977, with a paper detailing a theoretical analysis and review of empirical research related to the relationship between attitude and behavior. In this review, the authors found that "to predict behavior from attitude, the

investigator has to ensure high correspondence between at least the target and action elements of the measures he employs" (Ajzen & Fishbein, 1977). In summary, attitudes are critical to the determination of behaviors, but only insomuch as standardized scales and procedures are used in the analyses.

Interorganizational System Adoption

Interorganizational Systems Theory (IOS) was selected and incorporated into the framework of NPT because it was "expected to be useful for answering questions about why sought after organizations do or don't participate in using the health information exchange network (HIEN) technologies which are developed" (Thornewill, 2011). Interorganizational systems themselves are essentially "automated information systems shared by two or more organizations, and designed to link business processes" (Robey, Im, & Wareham, 2008). Further, they also facilitate and promote collaboration between partners in a network. Clearly, IOS and corresponding theories have much to offer in the way of defining and facilitating participation in network settings.

IOS research began in the early 1980s, but it was not until the late 1980s that it began to appear in multiple journals in the field of Information Science (Robey et al., 2008). Today, the most popular applications of IOS theory include supply chain management, electronic data interchange, and other pooled information resources, and less research has been done in governmental and nonprofit contexts, or new types of IOS including social networking services (Thornewill, 2011). Within NPT, the incorporation

of IOS principles include emphasis on facilitating conditions (including information technology) as it relates to and affects individual participation.

Multiple Levels of Participation – Individuals, Organizations, and Networks

Whole Network theory provides the framework to address the various entities that exist within most network contexts. Whole Networks are defined as groups of three or more organizations, connected in ways that facilitate the achievement of a common goal (Provan et al., 2007). Whole Network theory gives rise to a unique way of viewing networks as a whole, or rather, "Interorganizational networks at the network level rather than at the organizational level of analysis" (Provan et al., 2007). Whole network research has been applied to a variety of sectors, including: management, health care services, computer science, and others. While most of the whole network literature keys on specific network-level properties, including: density, fragmentation and structural holes, governance, centralization, and cliques—again, not at the egocentric or individual level (Provan et al., 2007)—there are a variety of research areas and questions that are yet to be addressed.

In a comprehensive empirical review of the whole network literature, Provan et al. outlines some important gaps in the literature for the purpose of future research. Many of these gaps pertained to the relatively small body of literature associated with this relatively new theory, of which the term *whole network* first appeared in 2003 (Raab & Kenis, 2009). Provan highlighted a myriad of research questions; however the following

research questions may pertain directly to and may be addressed by the research at hand in operationalizing NPT and gathering empirical evidence to determine causality within components of the model:

- Are there structural properties that are critical for overall network effectiveness, such as the presence of structural holes, or overlapping cliques?
- Are the structural properties that are most predictive of network behaviors, processes, and outcomes when studying interpersonal social networks also likely to explain the behavior, processes, and outcomes of whole interorganizational networks?
- What is the role that policy entities, especially government, play in shaping and constraining the structure of relationships within interorganizational networks, especially those that are formed through mandate? (Provan et al., 2007)

Whole Network theory is an important component to Network Participation Theory, as it provides insight to specific network challenges (Thornewill, 2011). Within the NPT framework, whole network theory is useful to highlight a series of network-level attributes that potentially promote or inhibit participation within the network. NPT highlights several of the network-level properties identified in the literature, such as network structure, network development, network governance, and others, as these network attributes influence individual beliefs, or predictors, within individuals in the network. This list is not exhaustive and empirical evidence and future research is needed to assess these causal relationships (Thornewill, 2011).

Public Health and Networks

It has long been understood that to achieve the mission of public health, networks of individuals, organizations, and professional groups are necessary (Bazzoli, 1997; Bazzoli, Dynan, Burns, & Yap, 2004; Beery et al., 2005; Butterfoss, Goodman, & Wandersman, 1993). Though there are a myriad of public health issues that highlight the importance of networks in the formation and implementation of solutions, perhaps none is starker than health inequity attributable to socioeconomic status. In 2009, the John D. and Catherine T, MacArthur Foundation released a comprehensive report on the relationship between socioeconomic status and health in the United States. This complex interaction is highly correlated with premature death, which is "more than twice as likely for middle income Americans as for those at the top of the income ladder, and more than three times as likely for those at the bottom (of the income ladder) than those at the top" (Adler et al., 2009). The gradient of health that exists throughout American society is affected by two policy types: those policies that facilitate greater equity, or those that "shorten the ladder and/or the distance between the rungs" (Adler et al., 2009); policies can buffer the adverse effects of living in the middle or bottom of the ladder, compared to those who are living at the top. Despite the presence of policies in each of these categories, "we are one of the richest countries in the world, (and) our people have one of the shortest life expectancies of any industrialized nation" (Adler et al., 2009).

Examples of policy categories that directly affect the income ladder itself include: education, income, and training. On the other hand, the policies that buffer consequences of disparities include: environmentally related policies, work safety policies, policies

related to cigarettes and alcohol, recreation, and policies related to nutrition. Each of these policy types is necessary if the health equity gap related to socioeconomic inequity is to be eliminated, primarily because of the time delay that exists for direct effect policy strategies to take effect. Again, the example of health inequity attributable to differences in socioeconomic status highlights a public health issue that is highly systemic, and ultimately requires a network-level approach to address and/or eliminate the problem. "Health policies and social policies are completely interwoven" (Adler et al., 2009), and in that sense social policies are health polices, and vice versa. The realization that housing policies, education policies, transportation policies, zoning laws, and others all are critical to determining disease burden and mortality, is an important first step in creating conditions in which public health can achieve its mission to "prevent disease, prolong life, and promote health through the organized efforts of society" (Winslow, 1920). Public health requires networks of individuals, organizations, and networks to fully do the work necessary to fulfill this mission, which has given rise to a new movement in understanding and developing policy.

The Health in All Policies (HiAP) approach is the result of this paradigm shift in thought, and is generally defined as "a collaborative approach to improving the health of all people by incorporating health considerations into decision-making across sectors and policy areas" says Linda Rudolph, former Director of Chronic Disease Prevention, California Department of Public Health. Though this approach has been developed and adopted in Europe, Canada, and Australia, as well as promoted by the World Health Organization, it has gained in popularity here in the U.S. with the realization that systemic, network-level approaches to problems like obesity, chronic diseases, and

healthcare costs are driven by non-healthcare related factors such as the environments in which we live, the foods we consume, and the services to which we have access (APHA, 2012). The HiAP approach to policy development was a major driver in the language and policy direction of the Affordable Care Act of 2010, and appears to be a major factor in policy considerations moving forward in the U.S.

The National Prevention Council and Affordable Care Act

On March 23, 2010, President Barack Obama signed into law the Patient Protection and Affordable Care Act (ACA). The law put in place comprehensive health insurance reforms, scheduled to roll out in the four subsequent years and beyond (DHHS, 2014). The ACA is a multifaceted piece of legislation that sought a multi-pronged solution to the dysfunctional healthcare system in the U.S. Some examples of changes the law brings about, include: *changes in coverage*, such as mandating insurers to provide coverage for children under 19 with preexisting conditions, protecting consumers from arbitrary withdrawals of insurance coverage, and guaranteeing consumers a right to appeal denial of coverage; *cost-related regulations*, such as an end to lifetime limits on most benefits for new health plans, insurance companies must publicly justify premium increases, and a control on how administrative costs are funded; and lastly *care-related regulations*, such as free or highly reduced-cost preventive care and services, greater consumer choice in providers, and a removal of insurance company barriers to out of network emergency services (DHHS, 2014).

In addition to these reforms in health insurance and the healthcare system, the ACA was followed with an executive order, signed on June 10, 2010, which mandated the formation of the National Prevention, Health Promotion and Public Health Council (NPC). Chaired by the Surgeon General, the NPC is represented by 20 federal departments and agencies, and members include cabinet secretaries, chairs, directors, or administrators of their respective federal departments. The NPC is important to public health as it "demonstrates unprecedented commitment to prevention and wellness in the US health care system" (Surgeongeneral.gov, 2014). The representation provided by this council is evidence of the HiAP approach to current and future policy considerations. The following table represents the NPC currently, as of July 6, 2014:

The National Prevention, Health Promotion and Public Health Council	
Current Member	Represented Federal Department or Agency
Rear Admiral Boris Lushniak	Acting Surgeon General, Council Chair
Secretary Sylvia Mathews Burwell	Department of Health and Human Services
Secretary Tom Vilsack	Department of Agriculture
Secretary Arne Duncan	Department of Education
Chairwoman Edith Ramirez	Federal Trade Commission
Secretary Anthony Foxx	Department of Transportation
Secretary Thomas E. Perez	Department of Labor
Secretary Jeh Johnson	Department of Homeland Security
Administrator Gina McCarthy	Environmental Protection Agency
Director R. Gil Kerlikowske	Office of National Drug Control Policy
Director Cecilia Muñoz	Domestic Policy Council
Assistant Secretary-Indian Affairs Kevin K. Washburn	Department of the Interior
Attorney General Eric H. Holder, Jr.	Department of Justice
Wendy Spencer, CEO	Corporation for National and Community Service
Secretary Chuck Hagel	Department of Defense
Acting Secretary Sloan D. Gibson	Department of Veterans Affairs
Secretary Shaun Donovan	Department of Housing and Urban Development
Acting Director Brian Deese	Office of Management and Budget
Secretary Sally Jewell	Department of the Interior
Administrator Dan M. Tangherlini	General Services Administration
Director Katherine Archuleta	Office of Personnel Management

Table 1: The National Prevention, Health Promotion and Public Health Council Membership

One year after the formation of the NPC, the official action plan for the NPC was released (June 2012) which outlined the implementation of a national prevention strategy. This strategy focuses on four overarching strategic directions, which include: empowered people, healthy and safe community environments, clinical and community preventive services, and the elimination of health disparities. Within these strategic directions are strategic priorities, and these include: tobacco free living, preventing drug abuse and excessive alcohol use, healthy eating, active living, injury and violence free living, reproductive and sexual health, and mental and emotional well-being (NPC, 2012). The NPC recognizes that to achieve goals in these areas requires not only a networked approach to solutions by federal stakeholders, but also a network beyond that of the federal government:

Advancing the Strategic Directions and Priorities of the National Prevention Strategy requires action beyond the federal government. The actions of state, tribal, local, and territorial governments, the private sector, philanthropic organizations, community- and faith-based organizations, and individual Americans are essential to improving health through prevention. Aligning strategies at the national, state, tribal, local, and territorial levels can help ensure that actions are synergistic and complementary (NPC, 2012).

The Network Approach Paradigm Shift

Public health is not the only sector which has shifted in focus to network approaches and the promotion of network solutions to issues at hand, nor is it only represented at the federal level. In Louisville, Kentucky, the Mayor's Healthy Hometown Initiative seeks a similar approach to population health and prevention activities. This local initiative and its own strategic plan entitled *Healthy Louisville 2020*, builds upon the direction of the NLC and applies a network-level solution to "promote health and wellness; prevent disease, illness, and injury; and protect the health and safety of Metro Louisville residents and visitors" (Metro, 2014).

The Mayor's Healthy Hometown Movement

Since 2004, the Mayor's Healthy Hometown Movement (MHHM) has been an umbrella for health-related initiatives of the Louisville Metro Government. Over the years, the movement has evolved and the focus has changed. It was originally developed as a long-term and multi phased program, with the goal of creating a culture of health and wellness, and a vision to facilitate in helping Louisville become one of the healthiest cities in America (Louisville, 2003-2015). The program was initiated by former Mayor Jerry Abramson and the former director of the Louisville Metro Department of Public Health and Wellness, Dr. Adewale Troutman, shortly after the Louisville and Jefferson County merger of 2003, which formed Louisville Metro. At the time of inception, the

nearly 700,000 residents of Louisville Metro were the target audience for the MHHM, and this still holds true today though the population of Louisville has swelled to over 750,000 (Bureau, 2012). Originally, the goals of the MHHM focused primarily on increasing physical activity and decreasing higher than national average obesity rates, and changing average nutrition habits to include greater proportions of fruits and vegetables. The model for achieving these population-related goals was the utilization of a *Health in All Policies* (HiAP) approach, which recognizes that health is moderated by a myriad of social and economic factors, and as such, sought to bring a variety of community stakeholders into the MHHM. Some of the agency and community roles involved, included: parks, neighborhoods, Transit Authority River City (TARC) public transportation busses, worksites, schools, faith-based institutions and organizations, the University of Louisville, and more.

As of 2014, the MHHM had changed to reflect the goals of Healthy People 2020, and some of the framework contained in the Patient Protection and Affordable Care Act (ACA), which calls for increasing collaboration to achieve community-related goals and objectives (USA, 2010). The HiAP language continued in this legislation, and those tenants have driven both the methodological approach of the MHHM as well as its organizational structure. Below is a diagram of the current model:

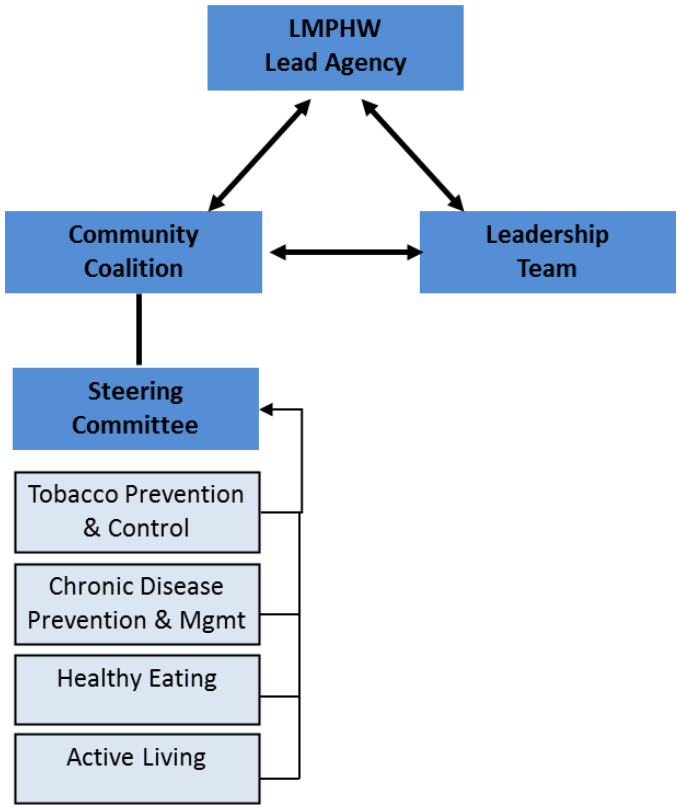

Figure 3: MHHM Organizational Structure

Dr. LaQuandra Nesbitt served as the director for the LMDPHW from 2011 to January of 2015, in a primary leadership role serving the Mayor's office. During this time she also served as the chair of the Leadership Team of MHHM. The leadership team is comprised of the aforementioned community stakeholders, but more specifically individuals in leadership positions, including: the superintendent of the Louisville Metro public school system, the director for TARC, housing authority, the director for the board of health, and so on. The leadership team coordinates an agenda which focuses the efforts of the community coalition, which includes more than 70 members representing more than 50 community-based organizations, such as: LMDPHW, community partners related

to businesses, schools, academia, faith-based groups, neighborhood groups, non-profit organizations, as well as any interested residents.

The community coalition appoints two chairs for each of the four focus areas, which include: tobacco prevention and control, chronic disease prevention and management, healthy eating, and active living. These four focus areas align with many of the goals laid out in *Healthy People 2020*, and are the umbrella community coalition groups to address the strategic planning items laid out in *Healthy Louisville 2020*. Healthy Louisville 2020 was the name given to the strategic plan that has been developed for MHHM. It was the culmination of years of research not only by MHHM, but also the results of the Greater Louisville Project, an independent and non-partisan civic initiative which is supported by a collective group of foundations (GLP, 2013). Their comprehensive report "*Building a Healthier Louisville*" outlined comparisons among 15 peer cities in which Louisville ranked 10th in health outcomes (GLP, 2013). This report along with others indicated targeted measures associated with: social and economic status; health behaviors; the physical environment; and access to clinical care. *Healthy Louisville 2020* outlines 13 related focus areas, which include:

Access to Healthcare	HIV Prevention and Screening
Cancer Prevention and Screening	Injury and Violence Prevention
Chronic Disease Prevention and Screening	Mental and Behavioral Health
Healthy Homes and Healthy Neighborhoods	Obesity Prevention
	Oral Health
Healthy Mothers and Healthy Babies	Public Health Infrastructure
Substance Abuse	Social Determinates of Health

The strategic plan was unveiled during a media event on February 19, 2014. Only hours after the presentation, city councilmen had proposed outlines to curb the sale of e-cigarettes and nicotine products to minors, citing a lack of research into these products' safety. The plan itself, contained in a 59-page document, has created several opportunities for not only those currently involved with the MHHM to participate, but "a roadmap to for improving the health of our city" (Metro, 2014) which will warrant the participation of even more residents.

Conclusion

It is from these significant bodies of literature and knowledge, and this contextual opportunity for analysis and application that the methodology for this project is brought forward. Bridging on the work of Dr. Thornewill and the construct of Network Participation Theory, its application to the context of a network-level collaborative in public health will need unique methodology relative to those methods used to generate NPT. In this sense, the use of an instrument designed similarly to the highly validated

UTAUT survey, has been found to be appropriate for a prospective study and the assessment of behavioral intentions (Venkatesh, Brown, & Bala, 2013). The body of knowledge is limited, however, with respect to specific questions and UTAUT survey design in a community setting. For this reason, it is apparent that a sequential mixed-methods study design is most appropriate, as expert opinion will be critical to not only define the network boundaries of interest (Laumann et al., 1989), but also to better understand what needs to be included in the instrument for the quantitative analysis (Butterfoss et al., 1996).

In the following chapter, the methodology for this research will be detailed. For reference, the research questions will be restated, followed by an overview of the study design, then separate sections relevant to the qualitative and quantitative phases of the research.

CHAPTER 3: METHODOLOGY AND PROCEDURE

Introduction to the Study Methodology

In the following section, the methodology for the study is explained in detail. These methods follow from the relevant literature and theoretical underpinnings described in the previous chapter. This section is primarily divided into three sections, including: research design, qualitative methodology, and quantitative methodology—following the chronological sequence of the study itself.

Research Questions

1. Can the adapted theory and causal model be used to predict stakeholder intent to participate within the Mayor's Healthy Hometown Movement?
2. Can an instrument be developed to gather data that is both valid and reliable in explaining the variation observed in this network as it relates to stakeholder intent to participate?
3. Assuming questions one and two are answered through the research, what factors are found to correlate with actual participation in the network?

Introduction

The methodology and procedures for this research is presented in the following chapter. The research design is presented first, in which the mixed-methods approach, or the "mixing" of quantitative and qualitative approaches to maximize insight into a research problem (Creswell & Tashakkori, 2007) is elaborated upon. Next, the variables for the quantitative analysis are outlined. The list of variables is intended to be comprehensive, but not exhaustive, and is subject to minor changes based upon the results of qualitative data collection. After the section on variables in the analysis, the target population and sample is detailed.

These three sections are followed by the two phases of the mixed-methods research in sequence with the research design: the qualitative and quantitative phases, respectively. Within each of these broad sections, establishing credibility, data collection, data analysis, and instrument design are also detailed. The methodology and procedures chapter will conclude with sections on: the advantages and limitations of the research design, details regarding research permissions and relevant ethical considerations, and the role of the researcher.

Research Design

The research design is a sequential, mixed methods study that utilizes collected qualitative data to inform the creation of quantitative data collection instruments, using these instruments in a network setting to predict stakeholder intent to participate. The

research is driven by the causal model adapted from source theories, including NPT, UTAUT, and TPB, with adapted concepts and language from Whole Network Theory. To achieve high levels of rigor in methodology, the research process is grounded in theory. The source theories which have been selected to be adapted for the community coalition, have not, to the researcher's knowledge, been used in this context at the network level. In the literature regarding community coalitions, particularly in public health, there is a strong emphasis on community-based participatory research and its implications (Butterfoss et al., 1993, 1996; Israel et al., 1998; Israel, Schulz, Parker, Becker, & Community-Campus Partnerships for, 2001; Minkler, Blackwell, Thompson, & Tamir, 2003; Paarlberg & Varda, 2009). What is missing from research such as this, however, is the etiology which could be generated from the application of Whole Networks theory and application of instruments such as UTAUT.

The research was supported by Dr. LaQuandra Nesbitt, who was the Director for the Louisville Metro Department of Public Health and Wellness until January 2015. During her tenure, she also served as the chairperson of the Mayor's Healthy Hometown, the network at the focus of this study. By granting her full support of the research, access to supporting documents and access to network participants, or the individuals from which data is gathered to assess the network-level phenomenon of network participation, was assured

Variables in the Quantitative Analysis

The quantitative analysis contains a diverse set of variables to parse statistical significance and correlation between each component of the causal model. Study participants are asked to provide basic demographic information, including: age, gender, employment information, organization type and size, and experience working in network settings. Each of these variables is used as individual and organizational level moderators, which moderate the causal links between the independent and dependent variables. Social structure measures, or a measure of network centrality, are achieved by requesting survey respondents to identify 5 other people in the network they personally know best, as well as 5 people, organizations, or other networks that may not be affiliated with MHHM, but they personally feel should be. These social structure measures are designed to yield a measure of centrality within the network, the variable used to measure network social structure, and the only variable in the quantitative analysis considered a network level attribute. Network social structure is hypothesized to influence perceived social influence in a direct, positive relationship. This methodology is new and unique to this study, as this is has not been addressed in the literature.

Specific variables for the four factors near the center of the causal model: 1) perceived social influence, 2) perceived costs, 3) perceived benefits, and 4) perceived facilitating conditions, are finalized through the collection of qualitative data specific to the network of study. Based upon the survey instrument used in UTAUT, 4 variables are generated with the qualitative data (Venkatesh et al., 2003). Each of these factors have questions already developed, and are highly validated for the context of information

technology use and adoption within an organizational setting. However for the purpose of this study, these general questions are adapted to reflect individual participation, within a network setting.

Behavioral intent to participate is the dependent variable within the study and the quantitative analysis portion of the research. Intent to participate within a network setting follows the research focus identified in NPT (Thornewill, 2011), as influenced by the aforementioned independent variables, which again include perceived social influence, perceived costs, perceived benefits, and perceived facilitating conditions. The intent to participate is a behavioral intention, which draws on the same causal model of TPB (Ajzen, 1991), whereby the intention is correlated with a set of beliefs. Behavioral intention is correlated with actual behavior in many studies, including UTAUT (Venkatesh et al., 2003), but this correlation is specific to the context of each of the previous studies. For NPT, this correlation was hypothesized through an exploratory retrospective study (Thornewill, 2011), but empirical validation of this correlation has yet to be identified in the literature.

In this study, actual participation is measured using two variables. Actual participation is assessed through separate instrumentation, given to the same respondents 3 months after the initial survey which assessed intent to participate. The second instrument is very short, consisting of only 4-6 questions. Nominal variables serve as a yes/no question indicating participation within the past 3 months. The final variable in the follow-up quantitative analysis assesses the *level* of participation. This ordinal level variable spans from very low levels of participation (e.g. reading MHHM related emails)

to very high levels of participation (e.g. serving on a committee and attending every meeting.)

Target Population and Sample

Rigor in the research project is further established through careful definition of the network boundary. Community coalitions are historically difficult to define and confine for the purposes of research (Laumann et al., 1989). According to Laumann and Provan, respectively, the best way to define these network boundaries is to confer with network leadership (1989; 2007; 2012). As such, in this community coalition network, boundary definition relies on expert opinion of the individuals already involved within the Mayor's Healthy Hometown Movement. Individuals in leadership positions may have an ideal mental model for the network boundary, although on paper and politically, the Mayor's Healthy Hometown Movement includes, or is open to, everyone in Louisville Metro. This information is available through the collection of physical records, such as attendance records at meetings, records of meeting minutes, the electronic mailing list or Listserve, and other documents produced through the organized efforts of the MHHM Leadership Team and Community Coalition.

Defining the boundaries of a network is a known, challenging task (Laumann et al., 1989). As MHHM is defined in its materials, everyone who resides in Louisville Metro is a part of the initiative, as everyone in the city is potentially affected by the work of the network (NACCHO, 2014). For the purpose of this study, however, this definition of the MHHM population is too broad, and a more narrow definition of participants

within MHHM is formed by conferring with experts—again consistent with best practices identified in the literature (Laumann et al., 1989).

To narrow the definition of this population boundary, the qualitative data is analyzed to hone in on the target population of interest for the research. The target population for the study is realized by asking a few simple questions regarding the nature of the research, as well as how to define participation. Essentially, this study assesses participation related to new participants (recruitment), or participation related to current participants (retention).

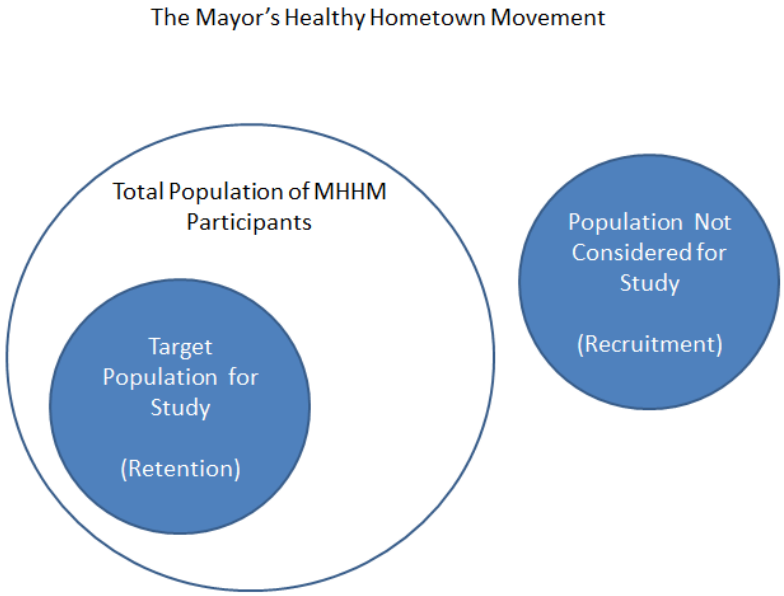

Figure 4: Retention and Recruitment

Participation in public health related networks, and in this case MHHM, ideally includes both of these participant categories. Since, however, these two populations are fundamentally different, only one is considered for this study. As such, this study focuses

on the problem of participant retention, and the target population is defined as current participants within the MHHM. These individuals include board members and those in leadership positions, committee members, and those on the MHHM email listserve. This population potentially includes affiliated individuals not on the mailing list, for instance employees of affiliated organizations and partners.

The target population for MHHM is compiled through available resources, such as: the available documents and records; information from social media; or other related information, and Microsoft Excel is used to organize the population by individuals and characteristics when necessary.

The sample for the quantitative analysis is as large as possible, and the instrument is deployed in electronic format, and paper format, as necessary. The survey is available for about a month to allow time for data collection. During this month, researchers use a several "touch" method as prescribed through the work of Donald Dillman (2011), with reminder emails, social media notifications, and in person visits to meetings, and sites of affiliated organizations to capture information from the randomly selected individuals.

To ensure that the final sample is similar to the overall population demographically, the preliminary research and data collection includes reviewing previous meeting minutes, internal documents and correspondences related to the MMHM network, any available census data of affiliated organizations and/or MHHM as a whole, a review of Facebook Analytics data to identify demographic characteristics, and a review of the MHHM listserv to again identify demographic characteristics.

Phase One: Qualitative Methods

The qualitative phase of this research has four primary goals. First, the qualitative data seeks to finalize the definition for the network boundary through conferring with network leadership, as is recommended in the literature (Laumann et al., 1989; Provan & Kenis, 2008; Provan & Lemaire, 2012). This goal also serves to identify the population of possible participants, and identify whether or not there are participants in MHHM outside Louisville Metro. Second, the qualitative data is analyzed to define participation for the network of interest, as it relates to both participation measures and potential participation opportunity. The qualitative data related to this second goal is cross-referenced with MHHM meeting minutes in an effort to triangulate and support the defined participation measures. Third, the qualitative data is analyzed to create an objective representation of MHHM in the form of a network map. This map serves to define and assess Network Social Structure in the developed and adapted causal model. In creating the network map, the same information is used to create a database for the total population of interest for MHHM. The fourth and final goal for the qualitative phase of this research is to identify the participation opportunity, or opportunities, of interest for MHHM and for the study. Preliminarily, this participation opportunity is the adoption of the *Healthy Louisville 2020* strategic plan, but analysis of the qualitative data is done to identify the details and measures of this adoption. Each of these goals for the qualitative data support the purpose for this phase, which is to provide context and perspective on the ecosystem in which MHHM is operating.

The qualitative methods for this research include semi structured interviews and focus groups. Each of these qualitative data collection procedures is for the purpose of framing and defining the instrument used for the quantitative data collection. An interview is conducted with Dr. LaQuandra Nesbitt herself, and other MHHM leadership as needed, dependent upon the data collected from her interview. The focus groups are a mix of active MHHM participants in both leadership and community coalition member roles. Consent forms for both the interviews and focus groups are created and qualitative research participants are asked to sign. This form is found in the appendix.

Establishing Credibility

Establishing credibility for the qualitative data collection and analysis is relatively streamlined, given the support of Dr. LaQuandra Nesbitt and role of David Johnson. David, the principle investigator and doctoral candidate, has been affiliated with the Department of Health Management and System Science at the University Of Louisville School Of Public Health since 2008, both in academic and assistantship capacities. Dr. Nesbitt, the former Director of LMDPHW, at the time of the research, maintained a faculty position in this department since she became the director in late 2010. Dr. Nesbitt offered her full confidence and support of this project, and provided a letter of support. Her primary support of this project's qualitative component included a semi structured interview with herself, as well as assistance in the recruitment of MHHM participants for

focus groups. With Dr. Nesbitt's central role in the MHHM framework and her provided support, the credibility of the research and recruitment of participants has not be an issue.

Data Collection

Qualitative data collection from both interviews and focus groups consists of audio tape recording of the interactions, and selectively transcribing the encounters. Selective transcription consists of listening to taped recordings and transcribing important sections with associated time stamps. Importance of sections for transcriptions is determined by information directly related to the five qualitative objectives. Qualitative data from both interviews and focus groups is transcribed using into Microsoft Word, and kept in a secure file using password encryption. Questions and topics for both interviews and focus groups are printed out for both the researcher and participants as a reference and outline. The qualitative data collection is sequential, where the interview or interviews come first, which may draw emphasis to certain questions or topics for the focus groups, which come thereafter. Questions for both the interviews and focus groups are reviewed by the researcher, and follow closely from the tentative outline for the quantitative instrument. These questions for both interviews and focus groups are similar to qualitative methodology in public health network analysis in community settings (Butterfoss et al., 1996).

Data Analysis

Qualitative data analysis is multi-phased. Once the interview and focus group data are collected via notes and digital tape recorder, the information is selectively transcribed using Microsoft Word. The qualitative data provide necessary insight to generate a network map, which is a depiction of social and environmental resources within a network (Tracy & Abell, 1994). The map is designed to be representative of MHHM, and helps to illuminate the participation opportunity definitions. The network map also assists in providing details of the total population for MHHM. Within the qualitative data analysis, common words and themes are highlighted in a qualitative data summary report of the results.

Instrument Design

With the qualitative data analysis complete and the report compiled, the final phase of the qualitative methods phase is the construction of the quantitative instrument. A draft of the instrument is included in the appendix. The wording of this draft instrument follows closely from the original UTAUT instrument (Venkatesh et al., 2003), which was developed for IT adoption in an organizational setting and context.

For each question, the most common language and/or themes are incorporated in the wording of the question. The instrument follows from the same categorical structure of the UTAUT instrument, but wording of each question is specific to the context of the

MHHM network. The adapted instrument is 25-35 questions in length, with a follow-up instrument of 4-6 questions. The follow-up survey is designed to assess the correlation between intent to participate and actual participation, and is delivered to all research participants 3 months after the initial survey delivery.

Instrument design follows closely from the aforementioned theories and the causality models for each. Driven by the adapted causality model and informed by source instruments such as UTAUT and the one developed for NPT, the adapted survey also collects demographic information related to moderators. The instrument, informed through a series of semi-structured interviews and focus groups with MHHM leadership, relies on these perspectives to frame the questions in a language and context that is specific to the MHHM participants. The instrument undergoes prescreening with leadership stakeholders in MHHM and pilot testing consists of several phases, including 10 or more MHHM participants, which may include individuals in leadership positions within MHHM. Informal feedback from those in the leadership team is sought, to further ensure the instrument is capturing the desired data.

Lastly, clearly defined and grounded survey administration methodology rounds out assurance of rigor within the research project. Several instrument formats are available, and each will have been pretested through the aforementioned processes. An electronic version is constructed and deployed through a web-based survey developer such as Survey Gizmo. Additionally, a paper version of the instrument is available to participants who would either prefer a paper version, or do not have access to technology support such as meeting attendants, or for those leaders who administer the survey to

other individuals within the organizations and/or networks they represent, or with which they are affiliated.

Phase Two: Quantitative Methods

The quantitative methods component of this research consists of two surveys to collect the quantitative data, which are analyzed using IBM SPSS Statistics 20.0 and Microsoft Excel. The surveys are sequential, separated by 3 months, and delivered to the same research participants through both electronic and possibly paper instrumentation. The database for the survey data are updated as completed surveys are returned to the researcher.

Data Collection

The instrument designed and informed by the qualitative data collection and analysis is delivered primarily in electronic form. This electronic survey utilizes the existing MHHM listserve, or mailing lists of affiliated organizations if available. A link to the electronic instrument is also posted via social media outlets specific to the MHHM, to potentially capture individuals not on their mailing lists. On the *Healthy Hometown* Facebook page for instance, there are 1381 (as of May 6, 2014) individuals, organizations, or other pages that have liked and follow the page.

Data collection by the first survey lasts about a month, with a several ‘touch’ method as prescribed by Donald Dillman for internet-based research methodology (Dillman, 2011). This ideally includes weekly reminders via email and social media messages, as well as in person visits with physical copies of the instrument to affiliated organization sites, and meetings of MHHM during this time, when necessary. During this data collection period, Dr. Nesbitt as per her letter of support is a supportive and actively recruiting, both within the LMDPHW and Louisville Metro government.

Data Analysis

Data analysis in the quantitative methods section consists of statistical analysis, primarily using SPSS 20.0, and Microsoft Excel for certain data cleaning and manipulation functions. Descriptive statistics for the data set establish frequencies of variables to better understand the sampled population. These frequencies include categorical independent variables such as age, gender, network-level experience, size of employer or represented organization, and the type of said organization. Independent variables are assessed on a case by case basis, and a variety of regression methodology may be used depending upon appropriate conditions, including but not limited to: binary logistic regression, ordered logistic regression, OLS regression, and/or multinomial logistic regression. Specific statistical needs and analysis is determined by insights identified in the qualitative data collection, as well as the adapted instrument which follows.

Both pairwise and listwise regression methods were used to identify consistency and internal validity of the data, particularly if there is a large proportion of incomplete survey data from respondents. Standard regression diagnostics on each of the included variables are performed, and both full and parsimonious models are generated and reported through this analysis.

Validity and Reliability

Validity and reliability for the quantitative methods portion of this research is established in the following ways. Internal validity of the data set is compared to sampled data not included (e.g. survey responses with incomplete data) in the final analysis to ensure no major differences exist between the included and excluded data. External validity is more difficult to ensure with the development of a new survey instrument, though the results are compared to those studies which used the source theories and instruments.

The survey instrument undergoes pilot testing before it is distributed to the full sampled population. This pilot testing includes 10 MHHM participants and evaluation experts employed in SPHIS, and the results of this testing ensure that the instrument is capturing the intended data from each of the questions and responses. Responses are reviewed and compared to the insights gained from the qualitative analysis section and the qualitative data which helped to formulate the survey instrument questions.

Advantages and Limitations of the Sequential Mixed Methods Design

The sequential mixed methods design has both strengths and weaknesses, which are both advantageous and limiting. The greatest strength of this design is the incorporation of insights gained from collecting qualitative data into the actual quantitative instrument. Although the causal model, theory, and subsequent instrument have been developed from grounded theory and existing literature, these have not been tested empirically in the context of a community coalition and prevention-focused network such as MHHM. The collection of this qualitative data and its incorporation into the quantitative methodology helps to establish insight given this new context, adapted theory, and developed instrumentation.

Strength of any mixed methods design comes from the triangulation of results from both qualitative and quantitative approaches. As with any research design, choosing either a qualitative or quantitative approach alone comes with certain limitations, or at least the exclusion of the possible benefits of each methodology. For instance, qualitative data gathering can produce a depth of understanding and new insights that quantitative data alone may not provide. Similarly, quantitative data can generate a calculated and measured analysis through statistics and statistical interpretation that qualitative data cannot provide. By incorporating each of these methodologies into a single study (when possible), the research can benefit from each of their strengths.

The research design does have several limitations, however, and the greatest limitation has to do with the newness of the adapted theory and research context, and the inability to compare the results of this study to another using this theory and adapted

instrumentation. Through this process, it may become apparent that only one of these research methodologies is appropriate for this given context, or that some confounding has occurred through the misinterpretation of qualitative data and the subsequent incorporation of these inaccuracies into the quantitative instrument. Another limitation has to do with the lapse of time between methodologies, and political pressures due to an election year with potential for subsequent leadership changes. The time that it takes to collect and analyze the qualitative data, develop the quantitative instrument, and collect the quantitative data has the potential to take longer than either of these chosen methods alone, and as such it is imperative for the researcher to be efficient and effective transitioning through the research process.

Research Permission and Ethical Considerations

Research permission was sought through IRB approval and possible exemption for the research project. Authorization was sought through the University Of Louisville School Of Public Health and Information Sciences, with Dr. Robert Esterhay listed as the principle investigator for the project. Dr. Esterhay is serving as the dissertation committee chair for David Johnson, the doctoral candidate central to the research project. The research project seeks exemption from the university IRB, as the primary entity being studied in this research is a network, not individuals, with no or minimal risk to human subject confidentiality.

There are, however, several ethical considerations for this research. The first concerns the collection of data from individuals to inform understanding about the

network. These individuals are asked to provide basic demographic information (e.g. age range, gender, professional experience) and identifying questions with which to link their responses to a second survey at a later date. These identifying questions include names and/email addresses, though these identifiers are removed in the analysis and replaced by case numbers. The confidentiality and anonymity of this information is of paramount importance, and the data is collected and kept in a secure format by document-specific passwords, as well as password protected in Dropbox, a cloud-based storage provider.

Another ethical consideration pertains to the anonymity and confidentiality of participants in the qualitative data phase of the project. This includes interviewees, as well as participants in focus groups. These individuals are given consent forms to allow what they say in these interactions to be included in the research process, both in the informing of the quantitative instrument and in the final write-up and presentation of results for the project. Participants are ensured anonymity, though given the opportunity to have what they said individually and specifically stricken from the research.

Lastly, consideration is recognized in association with results, as they describe participation patterns of individuals, organizations, and other networks involved with the MHHM. This includes network mapping of the individuals in MHHM, to identify centrality within and scope of the network. The network mapping is non-partisan and neutral, describing centrality and position within the network as neither a positive or negative phenomenon. With respect to individual participation and intent to participate, less focus and emphasis is placed on the individual's participation within MHHM, and more so with the instrument itself and its ability to predict stakeholder participation and the correlation between intent to participate in MHHM and actual participation.

Role of the Researcher

Within this research project the researcher maintains several primary roles. The first of which is a doctoral candidate, guided by the selected dissertation committee. Within this role, the researcher acts as the primary contact between key stakeholders, their insight, the data collected, and the dissertation committee members themselves. As a doctoral candidate, this role includes the conducting of original research and the production of a proposal, dissertation and presentation related to the dissertation defense. The researcher also maintains the role of the data collector and manager, with the responsibilities for scheduling and conducting interviews, scheduling and recruiting for focus groups, the dissemination of the survey instruments, and the collection of all pertinent qualitative and quantitative data, respectively. This role includes the management and security of these data, as described in the previous section.

Lastly, the researcher serves the role of a public health professional and indirect participant in the MHHM itself, as per the original charter (NACCHO, 2014). This role is the result researcher training and the nature of the MHHM and the inclusion of all residents of Louisville Metro in the definition and description of stakeholders and ideal members of the network, respectively. These roles are understood and managed carefully within the research project, as the researcher, a local public health professional, and a 'member' of the network.

CHAPTER 4: RESULTS OF THE STUDY

Introduction to the Study Results

The information in the following chapter, follows the chronological order of the research and be presented in a narrative fashion for which the research was conducted. Qualitative procedures come first, followed by the development of the adapted survey instruments, and the deployment of the survey instruments and the quantitative analysis which followed. Summaries of each of these research procedures will be offered throughout the chapter in each section.

Qualitative Data Collection

Qualitative data collection began in December 2014 with two separate semi-structured interviews with key MHHM leadership. These included interviews with the chairpersons of the Leadership Team and the Community Coalition. Both of these leaders provided responses to the questions and outlined topic areas, which yielded insights into specific MHHM context needed to frame the instrument to this specific network. That context was then taken into account and the draft survey instrument, modeled after UTAUT, was updated. This updated instrument was then presented to a focus group of 6 individuals in leadership and influential roles in MHHM. This focus group helped to validate the insights gained and the contexts gathered from the interviews, as well as

provide feedback on the updated survey instrument. In addition to these primary data collection activities, the research also included the collection of over 50 electronic documents as secondary data. These documents ranged from meeting minutes, reports, and grant information; to agendas, plans and presentations. This collection of documents ranged from as old as September 2004, to as recent as January 2015.

Semi-Structured Interview Number One

The interview with this leader took place on December 2, 2014 at the Louisville Metro Department of Public Health and Wellness. Only this leader and I were present for the semi-structured interview and the encounter was audio recorded. This audio recording was fully transcribed, though the initial methodology outlined for this research was selective transcription. The interview lasted 50 minutes and 45 seconds, and touched on each of the 5 topic areas or the qualitative methods purpose: 1) defining the network and network boundary; 2) defining participation in the context of this network; 3) information related to creating a network map; 4) identifying participation opportunities for the network; and 5) developing an understanding of perceived costs and perceived benefits specific to identified participation opportunities for the network. In the following account of the interview, some grammatical errors may be present in the quotations, but they have been maintained as a direct transcription what was said.

From this leader's description and account, the Healthy Hometown network, or the Mayor's Healthy Hometown Movement, fits within Thornewill's definition of NLCs within NPT; as a combination of individuals, organizations, and networks working

together to achieve a common goal (Thornewill, 2011). She indicated, however, that MHHM is currently undergoing a restructuring, similar to other times in its 10 year history, where the network adapts to changing political landscapes and funding sources. She recounted, for instance, that when the city received a 7.9 million dollar Communities Putting Prevention to Work grant (CPPW) in 2010, a branding exercise occurred in which the MHHM name was applied to many things, such as the annual Memorial Day Weekend event the Mayor's Hike, Bike, and Paddle and certain committees. Though this event still occurs today, the MHHM is applied more broadly, particularly with the development of the Community Coalition and Leadership team. Referring to the composition and definition of the MHHM network, she recounts:

> I think the thing that we are actually talking about right now is the community coalition, very broadly defined which is a little bit different to all the activity-focused things that happen. So, what that means, I don't know. Part of what, in fact I just put together a slide presentation, and in 2014 we had 10,000 people attend the Hike, Bike and Paddle event. We have 4,000 people on the MHHM email mailing list, we have 1,500 people following us on Facebook, we have 70 people (maybe, if we count it generously) participating in the community coalition. If we have a meeting, 70 people don't turn up, it's probably 7 if you're lucky to some subcommittee meetings. So there's this sense that we have all these people, but the reality is quite different.

She continued to discuss her perspective and vision for what she described as MHHM 2.0, which further elaborates on the similarity of a whole network definition and this network of interest:

> Okay, so under what I would call MHHM 2.0, we really see it as a community coalition and it's very much in a multi-sector vein, put these words here, the primary mechanisms for individuals, community–based organizations, businesses, and faith-based institutions to share their ideas and concerns with public health and wellness. So that means any individual who resides in, or is a member or an employee doing business in Louisville Metro, is eligible to join the community coalition. So pretty much anybody can join, it's supposed to be an open architecture. We actually would like a lot of people to participate, have multiple perspectives, have an honest open conversation, etc.

However, as indicated before, the total number of individuals who actively participate in the Community Coalition is rather low, at around "70 people (maybe, if we count it generously)." According to her, these 70 individuals represent about 50 community-based organizations, faith-based organizations and large employers. With respect to the network boundary, the original MHHM charter submitted in 2005 indicates that the (then) nearly 700,000 residents of Louisville Metro are the target audience (NACCHO, 2014). When asked about this boundary specification within MHHM today, she agreed the (now) nearly 760,000 remain the target population for the efforts of MHHM, in terms of the community served. Within what she describes as MHHM version

2.0, community is more broadly defined, where "Prior to now when people talked about community, they…were inclined to think that when you say community you mean grassroots, only neighborhood residents need apply." This previous understanding and pervasive definition of community contributed to a siloed environment in which the efforts of MHHM tried to operate. She provided two historic examples of committees that operated in a siloed framework, one of which was the Food in Neighborhoods – and when approached by MHHM to "broaden the frame," the committee broke away from MHHM and created their own group which retained much of their original purpose – farmer's markets, serve neighborhoods, and focus on west Louisville. This serves as an example of the challenge of defining the network boundary for MHHM, whereby the entire Louisville population is included within the boundary, though only a fraction are actively engaged.

Participation, as it is defined in this network by MHHM leadership, has several possible meanings. For instance, participation in a traditional sense involves attending meetings, serving on committees. However, today participation can be viewed more broadly in terms of being on the mailing list, or following the Healthy Hometown Facebook page – this in addition to attending meetings, serving on committees, working on specific projects, or attending large branded events such as the marquee Hike, Bike and Paddle event. Participation, in this sense, can have multiple definitions depending on the context within the network. As such, measurement of participation also varies, for instance in number of people attending one of the Healthy Hometown sponsored Learning Collaboratives.

In the Mayor's Healthy Hometown, particularly in the recent reinvention that is referred to as version 2.0, the network structure is more formalized, at least with respect to the Leadership Team and Community Coalition, which includes the four separate subcommittees. This information on the formal structure, along with the relevant qualitative insights from both this and the following interview, was incorporated into a Network Map, detailing many complexities of this network.

The Network Map (located in a following section as Figure 5) was created in CMap Tools: Knowledge Modeling Kit, from the Institute for Human and Machine Cognition. This figure is a concept map, a visual representation of knowledge, where nodes, or concepts, are joined by linking phrases to create logical propositions – where each proposition is two concepts joined by a linking phrase. The organizations and divisions that are represented by the individual participants in the network map have both real and estimated employees depicted above. This information was acquired through public human resource records for Louisville Metro.

As can be seen in this figure, what are not depicted in the network map are the less formal participants within MHHM. These partnerships and connections are still being developed and sought out, as per the new direction of the 2.0 MHHM model. Population health, in this sense, is the responsibility of the whole community, and not just the formal hierarchy with local government, in particular the LMDPHW, as the lead agent. This leader summarized this point:

> We need the whole community to be involved in population health; it's not just what we can do. A lot of the things in here (points to the Healthy Louisville 2020

> document), we can't do it. We rely on the private and nonprofit sectors to do it. So that has been how I see us engaging the private and nonprofit sectors, as well as residents, in implementing that, so now for me, that is the work of Mayor's Healthy Hometown Movement as we are trying to move forward. It's very narrow. It's not about what they dream up, or what they want to do, and it's not about them delivering it in the community so much as we're asking all community partners, particularly non-health partners, given the social determinates of health, we're asking people to go look at Healthy Louisville 2020, and are you doing something that is actually supporting our collective objectives, and if so tell us about it, and we can actually put it on the website and move the needle.

This provided a transition to the discussion regarding the identification of participation opportunities for the network. As stated above, the website mentioned referred to the Healthy Louisville Community Dashboard, found at www.healthylouisvillemetro.org. The Dashboard, as it is referred to by many of the MHHM leadership, was developed in 2014 and launched in the latter part of the same year. It bridges more than just the mission and objectives for MHH, but is also a tool for Louisville Metro to measure progress toward the strategic plan, Healthy Louisville 2020. The use of the Dashboard, then, is one participation opportunity that was identified through this first interview. Confirming this and other opportunities, she states:

That is definitely one. Then one of the things that we're doing here (in reference to a Learning Collaborative), this is the first one, a health in all policies one that's going to drive the process. Here it's scheduled for January 15. And as I've said my key challenge is communicating the critical role of the private, nonprofit, and especially non-health sectors in promoting population health. That's the hardest part. So we're talking with them about health in all policies, we've invited (a speaker), we may get somebody else, a national speaker, but we're still waiting to hear from them. We've set a participation goal of 80 for that, and we're hoping to learn from this one, to me this is kind of the framing opportunity, this first one, then we may narrow. I guess what I would want in the next round when we do healthy eating and active living, is that we would get whoever is the right set of public, private, nonprofit partners to come to the healthy eating one which will talk more specifically about, in my mind, what are the population health imperatives. So that's kind of what my thought process is, that's *my* thought process. I think the dashboard would be wonderful, but you know, it's brand new, it's actually asking people to go ahead and put up there what they're doing, we're still trying to figure out how to make that happen. And as I've said, I'm not sure where we are, so I think that the engagement and the learning opportunity would help people understand more, because they've got to understand what it is we're asking them to do. I have not put any measures along this continuum (where learning is at one end and collaboration is at the other, and somewhere in-between is an effective learning collaborative), I just know that it's a continuum, and that the learning will contribute to collaboration, and I really set this as my agenda for

2015, and I was going to revisit at the end of the year, "okay what have we learned, what has worked, what hasn't worked, how could we improve it." That's my current approach.

From the statements above, it became clear that this leader, in her leadership position within MHHM, has particular interests in relation to a definition of participation for the network as a whole. The use of the Dashboard, as she notes, is an ideal participation opportunity for the network, but with reservations as it is a newly developed and deployed tool for measuring community health. With these reservations, she notes that attendance to one or more of the scheduled Learning Collaboratives may be more appropriate for the purposes of research. This notion comes on the basis of at least two assumptions; the first being a more traditional view of participation and stakeholder engagement, as in attendance to a meeting in the form of a headcount. The second relates to her perception of stakeholders in this network in general, whereby learning must occur before collaboration can begin, or at the very least be effective. This second assumption was confirmed by both formal and informal interactions with other MHHM leadership. To further this understanding of participation, the following set of statements directly from the interview supports these assumptions:

David: So participation, as it were, in this network, is there a specific way that you would define that?

Leader: Well, right now we are going to call these four meetings, we will start to have monthly meetings for the whole of MHHM, starting in January. These are

four quarterly meetings that we will have, so I think we'll have both of these things happening. The question is, will we get more people to come to the meetings? I think that's to be determined.

David: But participation in that sense in I guess how you've described it there is almost like a physical participation, as in like attending a meeting, or being actively participating as opposed to…

Leader: Well I think there's a lot for folks, because I don't think that people, especially the non-health folks, I don't think that it will be an automatic understanding for them as to what their role is as a community partner. So there's a lot of learning, which is why I have this continuum. There's a lot of learning and conversation that people will have to engage in to understanding what their role is and come back and participate, you know. And then as we have speakers come in… so I think it's going to, I'm hoping – I guess I don't know this- I'm hoping that it's a snowball kind of an effect. That's my vision, that these learning opportunities will inform people's participation here and there.

With participation more or less identified, the final objective for this qualitative data collection opportunity was to define and better understand perceived benefits and perceived costs for this network of study. This leader lamented, "(she had) never done a survey to see what people perceived to be the costs and benefits, and that's a challenge right there. I don't have any accounting for costs and benefits. I think defining and realizing the costs and benefits is a challenge, in of itself." The lack of identified perceived benefits and perceived costs by this particular MHHM leader was not viewed

as an immediate issue, since one more interview and a focus group with MHHM leadership was still to come for the research. She did offer a statement on one benefit from her perspective: "I can define one of the benefits for us, as public health, which is all of an understanding where people are coming from and helping them understand how we see the world, trying to open up this notion of social determinates, and that health is not just healthcare, you know all that kind of stuff. So that's what the benefits would be for us, but from their perspective? I think that's less obvious."

The interview concluded a summarizing discussion of the above quote:

> David: And that's the last point. Do you think that this might differ between current and prospective network participants, like so those individuals who are at the table and those who are not at the table? Do you think that there's a gap in…
>
> Leader: I think we have a couple of challenges with MHHM. First of all, a lot of people think of it only as Hike, Bike, and Paddle. Not many people are focused on what, for me, are the kind of policy, engagement kinds of pieces. So this is a different tool, but because we have the same label, that presents a problem. So that to me is an issue, but I'm not saying we need to change the name. I think it's a great branding and it really is helpful when we are applying for grants. The reality is, when it comes down to really getting work done, or having knowing who is interested some of what we are interested in, it's less consistent. I think some of it is a lack of consistency.
>
> David: That's the blessing and the curse of having a rich history.
>
> Leader: Right.

Semi-structured Interview Number Two

The interview with this leader took place on December 18, 2014 at the Louisville Metro Department of Public Health and Wellness. Only this leader and I were present for the semi-structured interview and the encounter was audio recorded. This audio recording was fully transcribed, though the initial methodology outlined for this research was selective transcription. The interview lasted 41 minutes and 32 seconds, and touched on each of the 5 topic areas or the qualitative methods purpose: 1) defining the network and network boundary; 2) defining participation in the context of this network; 3) information related to creating a network map; 4) identifying participation opportunities for the network; and 5) developing an understanding of perceived costs and perceived benefits specific to identified participation opportunities for the network. In the following account of the interview, some grammatical errors may be present in the quotations, but they have been maintained as a direct transcription what was said.

The first 1:45 of the 41:32 minute interview did not record due to technical difficulties. According to research notes, other than introductions and interview recording formalities, not much was missed. She began to discuss her role in MHHM at the 1:15 mark, then again at 3:10. Transcription begins at the 1:36 mark with the aforementioned context. At this time, this leader was describing her conception of what the MHHM is:

> …the title was invented, you have these events around town like the Hike, Bike and Paddle that are themed Mayor's Healthy Hometown, or the Healthy in a Hurry corner stores are branded as Mayor's Healthy Hometown, and then you

> have some restaurants who do menu labeling that are branded as Mayor's Healthy Hometown. So you have that aspect of it, and then there's a group of people, or organizations or entities that identify as being part of the movement, and so being part of the movement means that from that perspective as either individuals or organizations, you actively engage in programs or support policies and initiatives that are part of creating a community where healthy lifestyles or improving the health of community is central to your focus as an organization. So from that perspective, I think the Mayor's Healthy Hometown *Movement*, in particular, as being the combination of activities, or policies, programs, etc. that are geared toward the development of a healthier community.

From the statement above, it is clear that this central leader has a clear understanding of what MHHM is and is not. As she goes on to help define the network, she recounts the formal structure of the MHHM, consisting of the Health Department, Leadership Team, and Community Coalition. She affirms, also, that the health department and the Leadership Team both have more formal and rigid structure than the Community Coalition, where "their membership is more dynamic and fluid, and it's open to anyone who would choose to participate." The Leadership Team, for instance, consists of individuals whose membership is dictated by the mayor. If these individuals are part of the executive branch of Louisville Metro government, they are mandated to participate by the mayor. Those agencies who do not report directly to the mayor, such as the Housing Authority, Transit Authority of River City (TARC), Jefferson County Public Schools (JCPS) and Metro Council, are still actively and formally engaged on the Leadership

Team. Through her statements, she helped to define the network boundary by indicating a geographic limitation for MHHM. The health department, as the lead agency, has no jurisdiction in Indiana, so membership or participation in MHHM is limited to those residing in Jefferson County, or Louisville Metro, though some agencies within MHHM, such as TARC and the Air Pollution Control District (APCD) might extend to the entire Metropolitan Service Area (MSA).

This leader's comments reaffirmed that the long and rich history of MHHM, as well as the branding and rebranding exercises over its existence, has led to a dichotomy of understanding of what MHHM is in the community.

> Leader: So the original iteration, I don't know what it was. Like, I got here and it was just sort of like 'we have hundreds of people are involved in this thing' and I was like well how does it make decisions? And there was no answer. How does it govern itself? There was no answer. And it was just sort of like, 'these people do the work' and I'm like, well what work? And there were really no real accomplishments of it, it wasn't, they didn't have a strategic plan, there was no real work that was getting done, it was sort of like 'oh, there's this guy who has a garden and he's part of the MHHM.' So it was like this frenetic activity of people who were really on a listserve, and there wasn't a coordination of any activities, there wasn't any governance structure, and it wasn't like, you know, there was a group of people you could go to if you wanted to get advocacy for an issue or anything like that. So, it didn't have any infrastructure.
>
> David: Okay, and so that came on when you joined the health department in 2011.

Leader: Correct. And so in 2012, we launched the new structure, created the leadership team and the community coalition as separate entities and started shoring up, and got co-chairs for the executive committee and all of that kind of stuff.

David: And then eventually released the strategic plan, which was February of 2014.

Leader: Right, but the community coalition has its own strategic plan. It's an appendix of Healthy Louisville 2020.

This more formalized structure, as previously noted and further conveyed by the above comments, is the structure in which the MHHM currently operates at the time of this study. Based upon the timeline described, it is clear that the current iteration of MHHM is still relatively new and was developing in 2015. With this newer governance structure in mind and from her comments, it was clear that *participation* and the definition of what exactly constitutes participation in this network had also changed, or evolved over the years. When pressed to define participation for MHHM, she had a clear difference of understanding the concept as it pertains to both the Leadership Team and Community Coalition:

Uh, no. Yes and no. Yes for the leadership team, no for the community coalition, and the reason why I say no for the community coalition is because we've redefined what we've expected out of members at different times. So we went through, in 2013 and 2014, we had the strategic planning phase. You don't need

hundreds of people to do strategic planning. So it would be unfair to say to people 'you weren't a good member because you didn't participate last year,' and define that by attending all of the strategic planning meetings. I know what participation is not. Participation is not just showing up to Hike, Bike, and Paddle. Right? I don't think that participation is just simply showing up to events, or utilizing the resources that are branded as MHH resources, I think that to be a member of the movement you have to be doing things that actively contribute to propelling us forward as a healthy community. Actively implementing programs or supporting the advancement of policies that are going to make us a healthier community. Now how we measure that level of participation is still very difficult for me to grasp, you know as we think about the dashboard that we've released for Healthy Louisville 2020 which we've linked to MHHM, it's sort of to that end saying 'if your organization is independently working on one of these 13 focus areas that's important to us, is that sufficient to consider you a member?' Right? Or do you need to officially line up with one of the four pillars – the healthy eating, active living, tobacco prevention and control, or chronic disease management and prevention – do you need to fit officially sign up for one of those four pillars and show up to one of those four pillar meetings, or one of the learning collaboratives for the year in 2015, and if you don't show up to one of those four, are you not a member. So it's trying to grasp those kind of concepts are very foreign, but if the part of the movement is to improve as to the very generic description that we have about 'advancing health and well-being of the community through this

movement.' If people are actively doing work that leads to that advancement, does that mean participation?

With this idea of what participation is and is not, the next objective for the interview was to identify opportunities for participation. With some questioning, this leader offered several ideas regarding specific participation opportunities that might be identified and incorporated into the research. She mentioned the Learning Collaboratives being held in 2015, and noted that there will be four of them. She also brought up a community health needs assessment that would be conducted in 2015 in partnership with the local health systems. She elaborated, specifically on this community health needs assessment as "a good opportunity for some of the members who participate who are affiliated with health systems, health centers, etc., to engage primarily because what we do, is we do sort of like these quadrant-based tours, and we do a lot surveys, and so it's an opportunity for those members to participate and give input but also to get the results, because we give those results out and they can use them for their own planning purposes." When asked about the community dashboard as a possible participation opportunity in of itself, she continued:

Oh, so that's like ongoing, so you can share all the time, and one of the things that (another health department official) and I talked about is through the community health needs assessment process we're actually advertise that as an opportunity to get more input from the community around things that are going on, to upload into the dashboard and to identify more gaps for things that aren't happening and

> then hopefully, the next set of community health improvement plans will fill in more gaps that exist, as opposed to the last time that there wasn't a dashboard, there was no way to really collect as much comprehensive information, and we also had some data gaps that we've filled in since then. And so this time it will be more so, let's use the 13 focus areas as the lynchpin for discussion, let's hopefully get some people to prioritize a couple of those focus areas, fill in some gaps in those focus areas over the next 2 to 3 years and then make that the routine process for updating their needs assessment.

It was clear from her statements, that this leader had identified several participation opportunities, through both her own volition and through my prompts. Related to these, may or may not have been a prioritization that was important to MHHM leadership. When asked if she had to prioritize these identified opportunities, she replied "I think they don't have to be prioritized; I think they can all move parallel. And in fact we've designed them to move parallel."

The final objective for this qualitative data collection encounter was better understanding the perception of costs and benefits within the network. This leader went on to respond to whether or not she could think of some of the most significant costs and benefits or define those for MHH related to participation:

> You know, it's really hard for me to answer that question, I don't know that I really can, primarily because when you're talking about a free service that provides networking opportunities in the traditional sense, that's why people tend

> to engage. What I will say is that some groups that may not have come to participate or have participated and stopped, they come because they want access to people. Right? So what we've talked about from the leadership team perspective is the best way to get all of the key players into the community coalition is for everybody to market it as the way to interface with the leadership team around health related topics and issues. And if people see it as the way to interface with the leadership team, and if we stay strong in our 'we're going to prioritize our agenda based on what the community coalition and its executive leadership recommends to us' and the community begins to reflect that, then we can drive more membership into the community coalition and make it our most effective tool for interfacing.

She concluded the interview discussing some of the similarities, differences, and particular challenges of the Leadership Team and Community Coalition interfacing. She accounts the experience between the two groups over the past few years, and offers that the Leadership Team is better at accomplishing tasks. That is not necessarily at the fault of the Community Coalition, but it speaks to the possible benefits of the formal structure of the Leadership Team, as well as the policy and decision-making capabilities of its constituent members.

Summary of Interviews and Qualitative Insights

The interviews with these two leaders yielded valuable insights needed to achieve qualitative data collection goals and the objectives. Upon completion of these two interviews, information had been collected enough; to define the network and network boundary; define participation in and for the network; to generate a network map; identify at least one or more participation opportunities; and better understand perceived costs and perceived benefits specific to participation within the network. With this information the instrument was updated from its draft version, incorporating these insights and differentiating itself from the original UTAUT instrument wording with network-specific context.

Both of these key leaders affirmed that the Mayor's Healthy Hometown is indeed a network, with both formal and informal ties and connections. The Leadership Team Leader, in particular, defined MHHM specifically as "being the combination of activities, or policies, programs, etc. that are geared toward the development of a healthier community," which is context specific to the definition of *whole networks*, as a combination of individuals, organizations, and entire networks working together toward a common purpose (Thornewill, 2011). This working definition of what exactly constitutes MHHM works well with the remaining categories for qualitative data to help define and further understand the network. Through these interviews it also became clear that the boundaries for this network were better understood through the expertise of leadership within the network, which is supported by network literature (Laumann et al., 1989). The responses by the interviewees indicated both active and passive participation for the

network, for instance, working with an organization to improve the health of the community versus a subscription to an email mailing list, would be examples of active and passive participation, respectively. The boundary for this network does include a geographic one, as the target population for the MHHM efforts applies only to residents of Jefferson County, or Louisville Metro, as this is a jurisdictional issue with the health department and city government operations. The target population and invitation of membership and participation is, however, extended to all 760,000+ residents of the city of Louisville.

From the previous section and from quoted segments of the interviews themselves, it is clear that these two individuals, both with leadership positions in MHHM, differed in their perceptions of how to specifically define participation for the network of study.

To one leader, participation is viewed both in a traditional sense, of participating in meetings such as the Learning Collaboratives, serving on committees and working on specific projects, as well as in a more contemporary sense, such as having *liked* the Healthy Hometown Facebook page and following posts, subscribing to the MHHM email mailing list and receiving updates about network activities, and even attendance of MHH branded events such as the annual Hike, Bike and Paddle. Contrary to this, the other leader was adamant that the one-off attendance of MHHM branded events such as the one stated above, was not *participation* in the sense of helping to move toward a healthier community. In consolidation of these differing ideals of participation in this network, participation has been defined to more closely reflect the latter perspective, though *levels* of participation have been identified. For instance, subscribing to a mailing list or

following the Facebook page would constitute a low level of participation for the MHHM. Higher levels of participation would include actively engaging as an individual or with an organization, or leveraging entire networks in specific ways to make the population of Louisville a healthier community.

From these two interviews and the documents acquired through secondary data collection efforts, enough information was gathered to generate a preliminary network map, or a visual representation of the most influential individuals, organizations, and networks who are currently participating in the Mayor's Healthy Hometown Movement. This information generally refers to the formal organization of the MHHM, and is represented in the figure below:

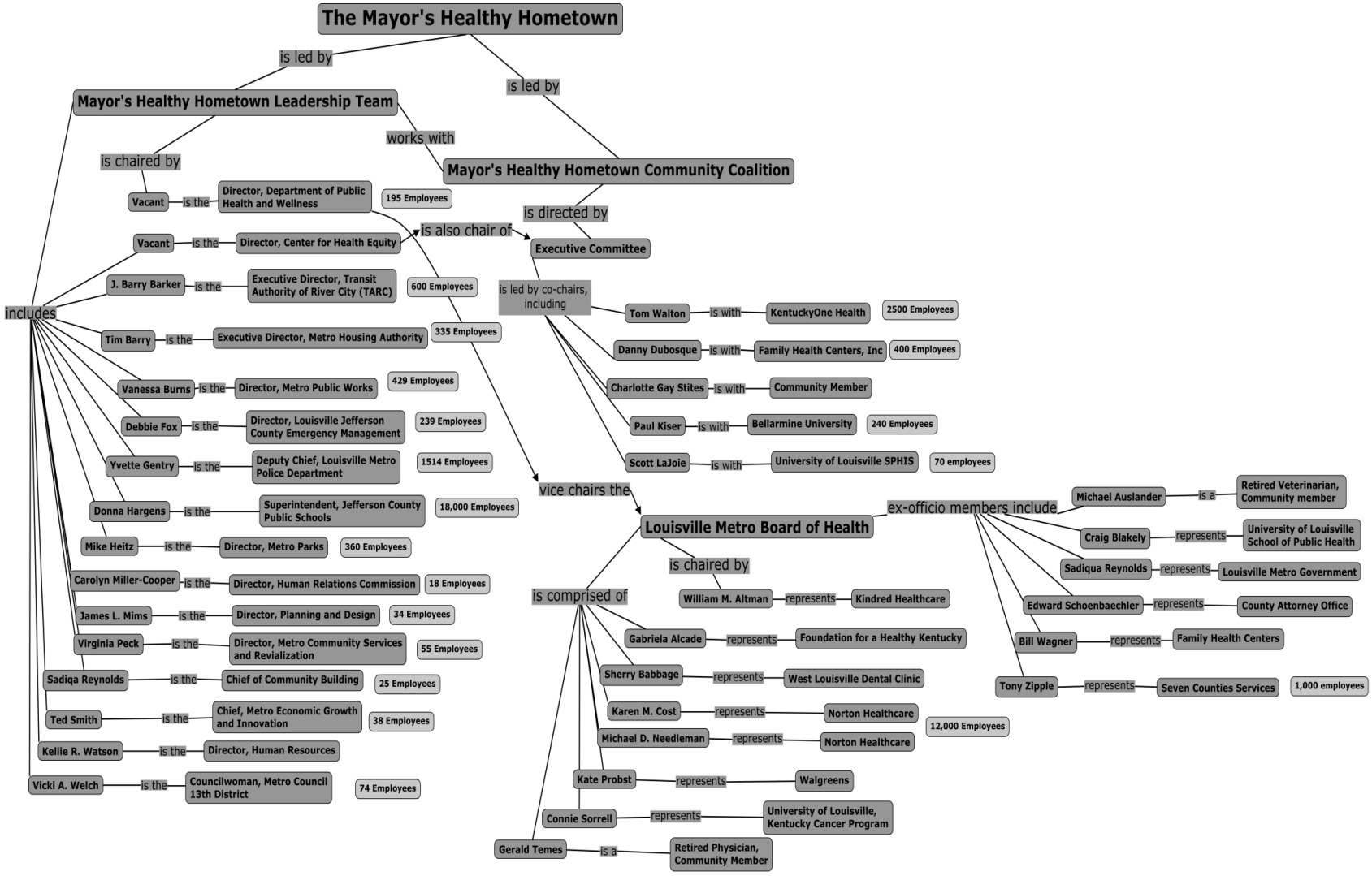

Figure 5: Mayors Healthy Hometown Network Map

As depicted, the formalized structure of the Mayor's Healthy Hometown include at least 35 separate individuals, who represent sections of government and/or organizations that account for nearly 40,000 employees. These estimates were obtained using public record human resource data from Louisville Metro, and through a myriad of organization-specific websites, in instances where information was also available to the public. Though the information is limited in accuracy, these generalized employee counts do provide context for the size and scope of the influence for which MHHM leadership has through these formal network connections. What this figure does not depict, however, are the less formal connections that exist particularly in the Community Coalition, through engagement by community members working with and for the Community Coalition co-chairs. This information was not made available by either of the interviewees, and was not accessible after several attempts to collect the data from health department leadership. The same is true for the list of individuals, organizations, and networks in the community or otherwise who are not currently participating in MHHM, but would add value with their participation. Though the specifics of this information was not made available, there was an understanding that there were, in addition to the formal ties depicted in the figure, a significant number of individuals on the MHHM email listserve (4400+) and following the MHHM Facebook page (1500+).

To summarize the identified participation opportunities identified through the interviews, the qualitative data collection conducted to this point of the research, a participation opportunity analysis was compiled to help organize some of these insights. This analysis was organized by interview, as follows:

Participation opportunities identified in interview with the first MHHM Leader:

1. Utilization of the community dashboard
2. Attendance to meetings and/or Learning Collaboratives

These participation opportunities were identified and better understood during a 51-minute interview conducted on December 2, 2014. Over the course of the interview, several aspects related to MHHM were discussed, including what participation opportunities exist for the network. These two opportunities were specifically identified. This leader felt strongly about both, though her perception about defining 'participation' as it relates to the network; fell more squarely into the physical participation, as in attending meetings and education opportunities such as the learning collaborative. She felt the community dashboard would be an impactful participation opportunity to the network, though it was not developed exclusively for MHHM.

To this end and ultimately, the community dashboard was chosen by the researcher from among these two as the most appropriate participation opportunity to include in the study because of several reasons. First, scale and sample size for meeting attendance may have been difficult with respect to the research efforts. Second, the required timing for collecting quantitative data measuring intent to participate with these scheduled meetings was unachievable in the first part of 2015. Third, the purpose for the learning collaboratives is directly and ultimately related to the use of the community dashboard. Though the community dashboard is not exclusively for the MHHM, the MHHM population of interest is clearly defined via specific email mailing lists.

Participation opportunities identified in interview with the second MHHM leader:

1. Utilization of the community dashboard
2. Community Health Needs Assessment

These participation opportunities were identified and better understood during a 42-minute interview conducted on December 18, 2014. These participation opportunities were not only the most important ones in which she identified, but she discounted or discredited that attendance to meetings or to MHHM labeled events is not sufficient to "be a member of the movement." In fact, she goes on to say "I think that to be a member of the movement you have to be doing things that actively contribute to propelling us forward as a healthy community. Actively implementing programs or supporting the advancement of policies that are going to make us a healthier community." She strongly supported the use of the community dashboard, but identified a community health needs assessment as another opportunity.

Based upon this information, the community dashboard was chosen among these two participation opportunities for a couple reasons. First, the level of enthusiasm and support for the community dashboard by her was undeniable. Second, the community dashboard is an ongoing opportunity, whereas the community health needs assessment is a single participation opportunity. In addition, both of these leaders have, since the time of the interviews, each left their respective positions at the health department. As such, the timing of the community health needs assessment and the scheduled learning collaboratives have both been disrupted. However, the Healthy Louisville Community

Dashboard is already up, running, and was slated to be advertised in the weeks following these interviews, including the learning collaboratives in January and May of 2015.

With the use of the community dashboard identified as the participation opportunity of interest for the research moving forward, it became apparent that the participation opportunity attributes needed to be analyzed. These attributes include a summary of the identified perceived costs and perceived benefits related to the interview qualitative data, as well as an initial adaptation of the question language from the original UTAUT instrument which help to inform both perceived costs and perceived benefits, as well as those attributes related to perceived social influence and perceived facilitating conditions:

Participation Opportunity Characteristics: Use of the Healthy Louisville Community Dashboard

The community dashboard was developed in association with the strategic plan, Healthy Louisville 2020, to measure activities and progress toward achieving objectives. The website URL is: http://www.healthylouisvillemetro.org. The community dashboard has been active since late 2014, developed by the Healthy Communities Institute, and was a topic of focus for a Learning Collaborative meeting held in January 2015. The use of the community dashboard is not specific or exclusive to MHHM; however there is significant overlap between the Healthy Louisville 2020 document and the strategic plan of the Community Coalition segment of the MHHM, as the identified priorities and objectives can and will be measured using the same community dashboard interface. The

community dashboard is free to use, contains useful information, and anyone can contribute content. Content contributions include submitting Promising Practices, reports, articles, and event announcements. In addition to these, the dashboard can be used to monitor community health status, identify activities, efforts in the community, eliminate the duplication of services, and more.

Perceived Costs

Main perceived costs to participation include those related to time, effort, and other opportunity-related costs. Use of the dashboard may not be intuitive for some users to interface, so the time involved with learning how to use it may also be a barrier. Ease of use of the dashboard itself is another potential barrier and may be a cost, as if it is difficult to use then some individuals may not use it. Along with the time and effort component, individuals may find that other ways to participate in the network, other than the use of the dashboard itself, may be better.

Perceived Benefits

Benefits to using the community dashboard include several areas to consider. First, there could be high utility to use the dashboard in relation to one's job or efforts in the community. For instance, an individual working in nonprofit may find it beneficial to

share the efforts of their work and organization with the general public. Similarly, the use of the community dashboard may be beneficial to connect to the community, or for individuals to feel more connected to and informed of community activities. Using the dashboard, particularly with respect to posting information related to one's community activities, could elevate visibility and social standing within the community. Lastly, the use of the dashboard and subsequent participation in MHHM activity is one way of individuals, organizations, and networks to gain access to influential leaders in the community via interaction and collaboration through the Community Coalition, and subsequently, the Leadership Team.

Perceived Social Influence

Some of the social influence factors related to the use of the community dashboard include whether or not the use of the community dashboard is supported by one's employer, influential people to the individual, important people to the individual, and support by the leadership of the MHHM network itself. Social influence focuses on those individuals around the survey participant, and how those individuals influence the survey participant's behavioral intent to participate in the use of the community dashboard. It is to this end that these attributes include individuals of authority, of importance, individuals related to employment, and individuals related to the community dashboard itself. These four categorical attributes for social influence provide a cross section of the social influence factors relevant for survey participants.

Perceived Facilitating Conditions

The attributes of facilitating conditions related to the use of the community dashboard are more diverse than other categories. Here, facilitating conditions not only include the resources necessary to use the community dashboard, but also includes the knowledge necessary to use it. Additionally, whether or not technical assistance related to its use is available, is also a facilitating condition of interest. Lastly, it is necessary to identify compatibility of the use of the community dashboard with other efforts an individual may be engaging in in the community and ensure that there is no conflict between the dashboard use and those community-level efforts.

Quantitative Instrumentation and the Adaptation of the Unified Theory of Acceptance and Use of Technology (UTAUT) Instrument

A rough draft of the quantitative instrument was developed at the outset of the research project and included in the prospectus before submitting for Institutional Review Board for approval. This rough draft of the survey was developed to emulate the UTAUT instrument almost exactly with what little information was available about MHHM before the qualitative data collection process began. Like UTAUT, this draft was a series of questions related to dependent variables, and a smaller set of questions related to independent variables. Below is the instrument by Venkatesh et. al to estimate UTAUT:

Table 16. Items Used in Estimating UTAUT

Performance expectancy

- U6: I would find the system useful in my job.
- RA1: Using the system enables me to accomplish tasks more quickly.
- RA5: Using the system increases my productivity.
- OE7: If I use the system, I will increase my chances of getting a raise.

Effort expectancy

- EOU3: My interaction with the system would be clear and understandable.
- EOU5: It would be easy for me to become skillful at using the system.
- EOU6: I would find the system easy to use.
- EU4: Learning to operate the system is easy for me.

Attitude toward using technology

- A1: Using the system is a bad/good idea.
- AF1: The system makes work more interesting.
- AF2: Working with the system is fun.
- Affect1: I like working with the system.

Social influence

- SN1: People who influence my behavior think that I should use the system.
- SN2: People who are important to me think that I should use the system.
- SF2: The senior management of this business has been helpful in the use of the system.
- SF4: In general, the organization has supported the use of the system.

Facilitating conditions

- PBC2: I have the resources necessary to use the system.
- PBC3: I have the knowledge necessary to use the system.
- PBC5: The system is not compatible with other systems I use.
- FC3: A specific person (or group) is available for assistance with system difficulties.

Self-efficacy

I could complete a job or task using the system…

- SE1: If there was no one around to tell me what to do as I go.
- SE4: If I could call someone for help if I got stuck.
- SE6: If I had a lot of time to complete the job for which the software was provided.
- SE7: If I had just the built-in help facility for assistance.

Anxiety

- ANX1: I feel apprehensive about using the system.
- ANX2: It scares me to think that I could lose a lot of information using the system by hitting the wrong key.
- ANX3: I hesitate to use the system for fear of making mistakes I cannot correct.
- ANX4: The system is somewhat intimidating to me.

Behavioral intention to use the system

- BI1: I intend to use the system in the next <n> months.
- BI2: I predict I would use the system in the next <n> months.
- BI3: I plan to use the system in the next <n> months.

Figure 6: UTAUT Survey Instrument

The draft survey emulated language, however, that more closely resembled Network Participation Theory (NPT). In NPT, some of the initial variable categories related to the use of technology were changed to reflect participation, as well as elements of another grounded theory, the Theory of Planned Behavior (Ajzen, 1991; Thornewill, 2011). The table below depicts some of those changes:

Variation in Theoretical Language	
Variable Categories in UTAUT	**Variable Categories in NPT**
DV: Performance Expectancy	DV: Perceived Benefits
DV: Effort Expectancy	DV: Perceived Costs
DV: Social Influence	DV: Perceived Social Influence
DV: Facilitating Conditions	DV: Perceived Facilitating Conditions
IV: Behavioral Intent to Use the System	IV: Behavioral Intent to Participate

Table 2: Variation in Theory Language

Several variable categories found in UTAUT were excluded from NPT, including; attitude toward using technology, self-efficacy, and anxiety; as these were found in the final and most parsimonious UTAUT model to be of lower predictive value than the aforementioned DVs (Venkatesh et al., 2003). The draft instrument included four questions for each of the DV categories and three questions or the IV category. In addition to these questions, were additional questions related to the moderators identified in the theoretical model of NPT, as well as one network attribute:

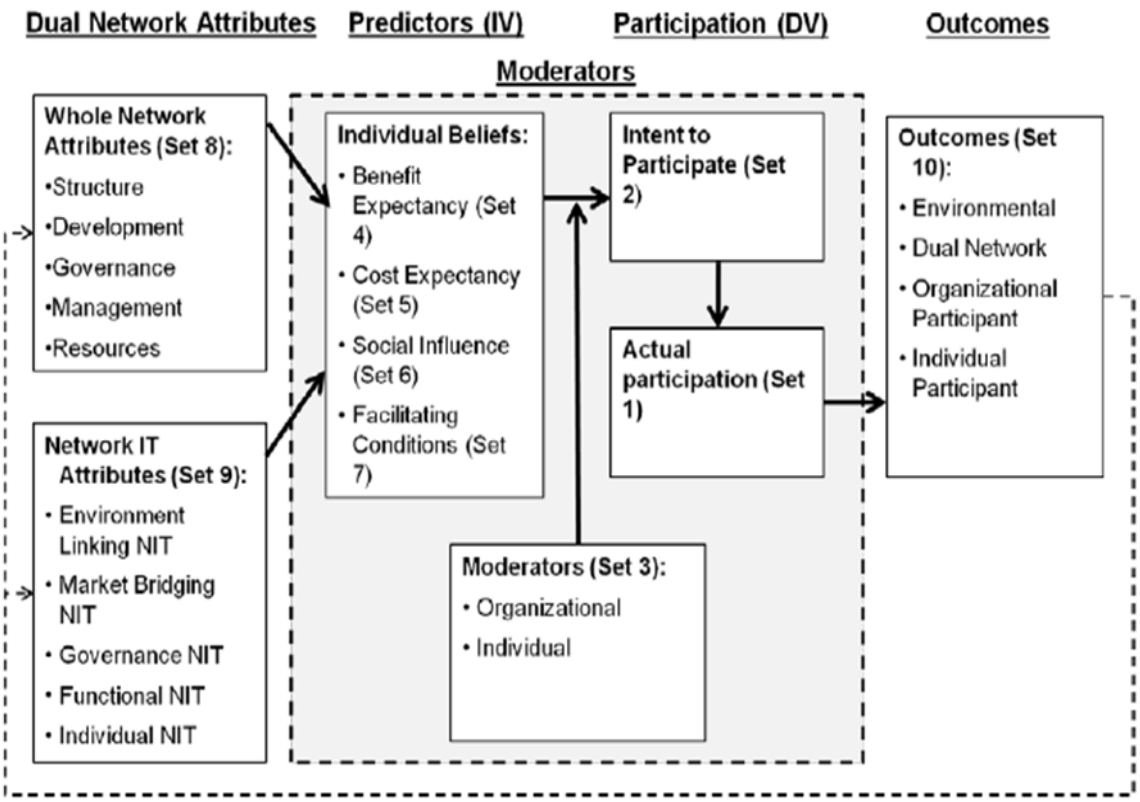

Figure 7 Network Participation Theory (revisited)

Questions related to the moderators included both organizational and individual level factors, identified as employer type and employer size, and age and experience in network settings, respectively. The network-level attribute chosen for the analysis was network social structure, which was ascertained through a specific question. In all, the draft instrument was originally 26 questions long.

Upon completion of the semi-structured interview qualitative data collection, the draft survey was revisited and revised to begin incorporating some of the qualitative insights. The most significant change between the initial and second draft of the quantitative instrument was the incorporation of the explicit identified participation opportunity—use of the community dashboard—instead of the generalized *participate in*

the network with no context of what that participation entailed. The second draft of the survey instrument is included here:

Network Participation in Public Health: Survey 1 (Draft #2)
Identifying Question: Name
Identifying Question: Email

Benefits

I would find use of the Healthy Louisville Community Dashboard useful in my job or efforts in the community.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Use of the Healthy Louisville Community Dashboard would enable me to be more connected to the community and informed of community engagement activities.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Use of the Healthy Louisville Community Dashboard would increase the health of the community.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

If I use of the Healthy Louisville Community Dashboard, I will increase my chances of gaining access to influential community leaders.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Costs

My contributions to the Healthy Louisville Community Dashboard would be clear and understandable.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Use of the Healthy Louisville Community Dashboard would be a good use of my time and efforts.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

I would find it easy to participate in the network with the use of the Healthy Louisville Community Dashboard.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Learning to use the Healthy Louisville Community Dashboard would be easy for me.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Social Influence

People who influence my behavior think that I should use the Healthy Louisville Community Dashboard.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

People who are important to me think that I should use the Healthy Louisville Community Dashboard.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

The leadership of this network has been helpful with the use of Healthy Louisville Community Dashboard.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

In general, my employer is supportive for the use of the Healthy Louisville Community Dashboard.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Facilitating Conditions

I have the resources necessary to use the Healthy Louisville Community Dashboard.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

I have the knowledge necessary to use the Healthy Louisville Community Dashboard.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

The use of the Healthy Louisville Community Dashboard is not compatible with my other efforts, or with the other networks I participate within.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

A specific person (or group) is available for assistance with difficulties related to the use of the Healthy Louisville Community Dashboard.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Behavioral Intention to Participate with the Network

I intend to use the Healthy Louisville Community Dashboard within the network in the next 3 months.
Yes
No

I predict I would use the Healthy Louisville Community Dashboard within the network in the next 3 months.
Yes
No

I plan to use the Healthy Louisville Community Dashboard in the next 3 months.
Yes
No

Network Social Structure

List 5 people you know best who you know participate within the MHHM network:
_____
_____
_____
_____
_____

List 5 people, organizations, or other networks that may not be currently affiliated with the MHHM network, but you feel should be:
_____
_____
_____
_____
_____

Individual Moderators

Please indicate which age range you fall within:
21 and under
22 to 34
35 to 44
45 to 54
55 to 64
65 and over
Decline

Please indicate your gender identity:
Male
Female
Other
Decline

Please indicate your level of experience participating within networks:
Very Low Experience
Low Experience
Moderate Experience
High Experience
Very High Experience

Organizational Moderators

Please indicate the size of your employer:
Self-employed
2-20 employees
21-100 employees
101-300 employees
301+ employees

Please indicate the type of your employer:
Nonprofit
Government
Academic
Healthcare
Other – If other, please describe: _____

This second draft of the survey was, again, an incorporation of some of the foundational UTAUT instrument language, as well as some of the insights from the interviews. Some of the perceived benefits and costs specific to MHH can be seen in this version. For instance, question four in the benefits section, refers directly to the relationship of the Community Coalition to the Leadership Team –completely different than the original corresponding UTAUT question; *if I use the system, I will increase my chances of getting a raise*. On the other hand, several questions in the updated draft were able to maintain high degree of continuity with the UTAUT instrument. Such is the case with question ten in the social influence section of the second draft – People who are important to me think that I should use the Healthy Louisville Community Dashboard—is identical to the corresponding UTAUT question; *people who are important to me think that I should use the system.*

In the first draft of the survey instrument, efforts were made to retain as much of the original UTAUT instrument language as possible, less consistently updating the participation opportunity. Upon completion of the interviews and the identification of said participation opportunity, more insights into contextual language specific to MHHM was also identified. The second draft of the survey instrument underwent critique and pilot testing, in the form of focus group review and electronic deployment of the instrument to a number of individuals in MHH leadership positions.

Focus Group: With Five Individuals in Mayor's Healthy Hometown Movement Leadership Positions

The focus group with 5 individuals in MHHM leadership positions took place on March 4, 2015 at the Louisville Metro Department of Public Health and Wellness. Only I and the 5 MHHM officials were present for the semi-structured focus group, with one invited MHH leader in absentia. The encounter was audio recorded and this audio recording was fully transcribed, though the initial methodology outlined for this research was selective transcription. In the following account of the interview, some grammatical errors may be present in the quotations, but they have been maintained as a direct transcription what was said.

The focus group lasted 1 hour 28 minutes and 39 seconds, and each of the 5 topic areas, similar to the interviews, was discussed: 1) defining the network and network boundary; 2) defining participation in the context of this network; 3) information related to creating a network map; 4) identifying participation opportunities for the network; and 5) developing an understanding of perceived costs and perceived benefits specific to identified participation opportunities for the network. In addition to discussing these topics, the focus group was somewhat repurposed from the initial methodology, to include validation of some of the qualitative insights gained from the previous interviews. This validation was necessary because both of the interviewees had left their respective positions, and relinquished their important roles as leaders within the MHHM. Also, the focus group was invited to review the second draft of the survey instrument, to further validate some of the incorporated insights and seek their own input for improvement.

The focus group session began earlier than scheduled due to an imminent winter weather event that would occur later that day. We began with two of the eventual five participants. These two, in particular, had both been affiliated with MHHM for several mayor and health department leadership changes, so their perspective on MHHM history, particularly in light of the concurrent leadership change, was found to be very helpful and insightful historical context for MHHM.

MHHM Leader One and Leader Two agreed with the insights of the previous interviews, in that the jurisdiction of MHHM extended only to members of Louisville Metro and Jefferson County. Leader One did, however, have these insights to offer:

> Well I can answer this in the context of your question as who would you consider part of the Mayor's Healthy Hometown Movement, and I think there's a couple ways to look at this. If I look at this the way it was originally designed under the first director, and yes it does change under directors, just as public health has changed, the MHHM was classified as a movement and it considers anyone can be a part of that movement, because it's one of our core objectives is to create a culture of health and wellness in the city. If it's in a branding sense, that's what it is. To me, anyone can be a part of that, any one individual collectively can be doing things to improve health, create a healthier city was one of our mayor's goals, and then it can be more strategically designed or slimmed down to include things like we're doing now with more focused collaborations and facilitations to move towards improving specific goals, or as outlined in the focus areas of Healthy Louisville 2020 it can be more focused. But from a branding perspective,

> we look at it collectively as anyone doing things to improve health, whereas you yourself are planting a garden, or you're working on a community garden with everyone, so individual or collective contributions.

These participants were further prompted to discuss the naming convention regarding the Mayor's Healthy Hometown, Healthy Louisville, and Healthy Hometown. The consensus between these two leaders is that "Healthy Louisville is the plan that anyone engaged in the Heathy Hometown Movement can use…It's a more focused plan that anyone can plug into, join in to one of the focus areas, what focus (area) means something to you, (and) here's how you can engage." Regarding 'Healthy Hometown,' such as the way the Facebook page is labeled, and whether or not the 'Mayor's' and 'Movement' had been officially dropped from the name, Leader one said, "No, I just think that we, it's not officially dropped, you know if you look at the logo and things like that it gets shortened often in just talking about it, but if we were applying for a grant, we would use "Mayor's Healthy Hometown Movement" as a strategic way to implement stuff, we would call it the Mayor's Healthy Hometown Movement." Leader Two added that having the mayor's title attached to the network gives it a certain level of attention, where more partners who want to engage, and more possible funders to assist.

From the qualitative data collected from the interviews, it came to light that MHHM has had a long history in the community, with changing priorities and funding streams over the years. From both formal and informal interactions with MHH leadership, the topic of rebranding came up and even changing the name. One leader, for instance, indicated that at one point in time, some of the leadership wanted to formally

change the name of the Mayors Healthy Hometown Movement to something that did not include the word "Mayor." The justification for this, at the time, was to remove the political aspect and connotation for the network that the tie-in with the mayor's office inherently brings with it. Understanding this, and in light of the variation in the name of the network at least in an informal sense, the following dialogue continued:

> David: Do you feel like the long, changing history of the Mayor's Healthy Hometown, and keeping the name the same is beneficial, or kind of counterproductive, or a little bit of both?
>
> MHHM Leader Two: That's a great question.
>
> MHHM Leader One: I think it's beneficial if mayors can support, I mean how can a mayor not embrace supporting a healthier city, especially when the data shows the horrible health statistics that we do have, and if a mayor is about facilitating change through public-private partnerships because government can't do things alone. I feel like it's a good strategy that many people can embrace, so it's a good strategy for a mayor to continue forward. It's also, again, an access to more funding for things, and because it's so tied to the other things that a mayor oversees, dealing with housing, jobs…
>
> MHHM Leader Two: Public works, economic development, transportation… right. Education. I would say too, having been a part of it from the very beginning, I think it's been helpful for us, and we can see as government people, the importance of that strategy for continually getting money, for having a mayor elevate health to one of his top three priorities. I would say that for the coalition,

though, it is probably really confusing, because people who signed on initially and came to meetings and were very active, a) we're united around obesity as an issue, it was a very sort of limited focus, and now we're really organized around places as opposed to topics, or as opposed to a variety of preventative health behaviors. So I think it's been confusing to them, and the other thing is too, government, we get – well, as we've learned, neither one of us came from a government background – but as you learn, certain things continue as benefit but it may be confusing to people, the people in the coalition with whom we work. I think it has been confusing, don't you?

MHHM Leader One: Mm-hmm.

MHHM Leader Two: And then at one point it became sort of a, from specifically a ton of work that (MHHM Leader One) did, was branding it in a certain way because we said that we would do that under the CPPW grant, and so then people were like "oh, well that means these other people are involved," but you're doing this and this, and what is… the transitions of everything, I think, have been confusing for people, so what are we really doing now is the question.

The conversation continued, and it was identified that MHHM Leader One arrived at the health department two years after the launch of MHHM itself. However, MHHM Leader Two had been within the agency for its inception and before. As such, MHHM Leader One offered, "So I think when it started, it was not necessarily all that strategic," to MHHM Leader Two's reply "Oh it was not strategic at all." The focus of MHHM now, they agreed, is a much more data-driven approach. This new approach to strategic

planning that is both purposeful and data-driven, again they agreed, was the result of network leadership as opposed to a natural evolution as a shift in priorities for the network.

> MHHM Leader One: No, I think that Dr. Nesbitt really said "okay, we can't just have this big 'throw a net out there' and hope people are going to follow" let's be really strategic about what, and be strategic about data informing what we do.
>
> MHHM Leader Two: Meaning that we're not just looking at obesity, there are other issues here, first and foremost smoking. Why haven't you guys included that? You know, so part of it was looking at it and going "this is so limited" in what we can measure, and being able to show results. There's a science approach and we're saving money or we're creating efficiencies for government, and we're improving life for people in Louisville.
>
> David: Do you feel like that data driven approach is going to continue?
>
> MHHM Leader Two: Oh yeah. I think based upon what we've learned now we would have to advocate for that.
>
> David: And in the investment too, right? With respect to the community dashboard and such like that.
>
> MHHM Leader One: Exactly.
>
> MHHM Leader Two: And seeing some of the work that (other MHHM leaders) have put together for the next learning collaborative – I need to send you what they've put together for the next learning collaborative, it's going to rock your world – so the way that they're going to roll out the next learning collaborative is

going to keep people focused on the data and evidence based things that work for the data, and then groups will be encouraged to choose things

At this time, MHHM Leaders Three and Four joined the focus group, 11 minutes and 54 seconds into the recorded session, and MHHM Leader Five joined a short time later at 22 minutes and 22 seconds into the session. These participants joined and were offered a summary of what was discussed in the previous 12 minutes and 22 minutes, respectively, as well as an overview of the purpose if the focus group. The purpose included a validation of the qualitative data from the interviews, which everyone now present agreed was necessary due to the leadership transition and the vacating of these two key leadership positions. With that, it was further confirmed that with respect to the network, the population specific boundary was bound to Louisville Metro and/or Jefferson County. Additionally, agreement was added following these statements: "From those two interviews, I gleaned that probably one of the most substantial participation opportunities for the Healthy Hometown Movement is the use of this community dashboard that's now been developed and is very new and is about to get some publicity. So the use and utilization of this community dashboard is where we're focusing, which justifies using the listserve as the population of focus because they're already plugged in with a technology focus…at least they have email capabilities."

With the network boundary identified and agreed upon, participation defined, information to generate the network map already collected, and the participation opportunity agreed upon by the leaders present, the conversation continued with a focus to identify particular costs and benefits for the use of the community dashboard. This

included validation of previously identified and understood perceived costs and perceived benefits, as well as the identification of new ones. For instance, MHHM Leader 5 offered a background story of Fresh Stops, the only *promising practice* listed on the community dashboard. As such, the leaders who pushed it through to get Fresh Stops on the dashboard so soon after the deployment of the dashboard, thought that it would be beneficial from an organizational perspective to highlight this work in the community. In this same exchange, other MHHM Leaders contributed, particularly MHHM Leader Two and Leader Five again, stated that the community dashboard is not easy to navigate, and is not what they considered "user friendly." MHHM Leader Two continued by mentioning that it may take "5 clicks in, before you're going to get to what you need." MHHM Leader Three offered a slightly more robust take on perceived costs, benefits, and the purpose of the dashboard itself:

> Because I view it as really, kind of, and again within this model of your research and not necessarily within its scope – it's participation in the sense that you're reporting your participation, but it could be more useful from a community health standpoint of being able to see what is going on easily, and then tapping in to allowing your participation to be with those groups. Right? You're not participating with the health department at all. Just go in something I'm interested in and I'd like to go offer my services or volunteer to this organization to get, you know, you're actual participation wasn't that you got on the dashboard to look something up, it's that that informed you as to where you could go participate.
> MHHM Leader Two: Right. So there's a connecting focus.

MHHM Leader Three: Yeah, that's what I see the whole thing as being is – it's an information source, and if it's not used then it's a wasted information source. If we can't get information into it, then it's completely wasted and needs, not only the marketing behind pushing it, but then the accessibility and the information all have to work, or it's a giant waste of time. And I don't want it to be that, obviously, I think it's a great idea, I think it's a resource that isn't accessible anywhere else, there is nowhere to go in this community to say, 'oh, I'm interested in helping making food accessible, what do I do?' I know, kind of, but if I was not a member of this group, you know you see articles about food deserts and things, but what can I do? I don't even know who to call. I wouldn't even think health department. I guess I think ministries, maybe? But then it's not necessarily a food desert issue, it's being hungry, which is obviously related but it's where do we get enough canned food drives to get set up for the soup kitchens and that kind of thing. I think allowing people to participate, with information source is lacking significantly.

The discussion continued with comments regarding effectiveness of participation efforts in the community related to the dashboard. It was explained that better understanding *intent to participate* and possible correlation *actual participation* was the primary focus of the research, and that measures of effectiveness were beyond the scope of the research. Upon that explanation, there was unanimous agreement regarding the research and project focus. Better understanding the factors that get people to use the dashboard, however, is a focus of the research. MHHM Leader Three offered perspective

on what does and does not constitute participation in relation to the dashboard use. “I’m saying that the level of participation would be then, use that to what end. Now if it’s reporting on things you’ve done, then sure that demonstrates participation. So then I found this group and I went and worked with them on a Saturday then that’s participate, not just information search and collecting.” This perspective and statement was the only time in the focus group session in which the use of the dashboard, in relation to using it to merely access information, was not considered participation.

At this point, the conversation transitioned to a discussion of the draft survey itself related to particular question content and wording. Question 1 was read aloud as “I would find use of the dashboard useful in my job or volunteer efforts in the community,” as opposed to not mentioning volunteer efforts in the question text. There was general agreement that the inclusion of volunteer activities within the meaning of that question was a necessary idea that warranted revision. Similarly, MHHM Leader Three commented about the wording of questions in the survey in general, where “some of your questions are more passive and conditional and others are ‘by doing this, I’.” This prompted the researcher to indicate a need for checking the draft survey language against the original UTAUT instrument. Similarly, MHHM Leader Two commented, “When you call it ‘the network’ will they inherently know that that means MHHM?” This comment spurred agreement by others present, that the word ‘network’ is too ambiguous and too open for misinterpretation. In trying to identify what to refer to ‘the network’ as throughout the survey:

David: So, MHH. What would be the best way to frame that in this survey? Using MHHM, or Healthy Louisville, or Healthy Hometown?

MHHM Leader Five: Well I think you're getting to the crux of where we are as an organization, and I've heard from a lot of people that were at the first learning collaborative, that said 'well why is it the mayor's healthy hometown?' And that sort of leads me back to my big beef of, well if it's the mayor's healthy hometown, where is the mayor? I've not been as long as you have (talking to MHHM Leader Three) but he's at the Hike and Bike and all that stuff.

David: The highly visible stuff…

MHHM Leader Five: So do we need to rename this? We talked a little bit about that, should we be Healthy Louisville 2020, should we be Healthy Louisville?

MHHM Leader Two: That's really interesting.

David: A lot of organizations seem to be adopting the 2020, you know, using that year within whatever it is we're talking about – I think Belermine's got a 2020 something.

MHHM Leader Two: Why don't we just use Healthy Hometown.

D: The Facebook uses Healthy Hometown.

MHHM Leader Four: Yeah, so we changed some of the branding so it's not consistent but it should be just Healthy Hometown.

Other insights followed over the course of the discussion, but those insights were dispersed among comments by MHHM Leader Three. Each of these were important, either related to the research overall or to the survey instrument specifically. The

following table does not necessarily follow the flow of conversation from this point forward, but it instead identifies those insights:

Contributor	Insight
MHHM Leader Three	Include a link to the dashboard in the survey
	Make it clear that the survey is coming from a research student
	It may be very interesting to have the health department pull tracking information before and after survey deployment on the dashboard
	Send the email from a UofL School of Public Heath account as opposed to from the health department (MHHM Leader Five seconded this notion)

Table 3: MHHM Leader #3 Insights

The focus group concluded with a few additional comments. Through a discussion with these leaders, the idea of *level of participation* was not agreed upon. There were differing ideas and preferences for how this should be measured, ultimately with no real consensus between those present. The leaders present did, however, agree that the use of the dashboard was an important participation opportunity to address. The final insight gleaned from the focus group came from MHHM Leader Four, who indicated that the MHHM listserve has approximately a 10% open rate on sent correspondences. That is, the GovDocs delivery system has tracking capabilities and it has been determined that of the 4,000+ email subscribers, only about 400 will open any given email. MHHM Leader Four expressed that email subscribers may be more likely to

open the email message containing the link to the survey since it is not in association with the newsletter.

> MHHM Leader Four: 10% of 5000, I think that's pretty good, it's not bad, it's…Sometimes 7…

Instrument Pilot Testing and Instrument Revision

The focus group provided many great insights into both context for the research and the development of the quantitative instrument. Many of the suggestions made by MHHM leadership in the focus group were taken into account and incorporated into the piloted draft of the instrument. Some of these suggestions included the incorporation of a URL link to the survey itself, and the reviewing of language as it is adapted from the original UTAUT instrument.

Still other comments and suggestions outside of the formal focus group setting helped to develop the piloted draft. For instance, an informal conversation with the MHHM Leader who was not able to attend the focus group took place. During this conversation, the leader indicated that a 7-point scale for the questions felt cumbersome. This information was relayed to dissertation committee members who ultimately agreed that a 5-point scale would be more appropriate, and the additional accuracy that may have come from the 7-point scale was not worth the increased burden placed upon respondents.

Each of the focus group participants, the one MHHM leader who was not present, all four dissertation committee members, and one evaluation specialist affiliated with the University Of Louisville School Of Public Health and Information Sciences were invited to take part in the pilot test of the survey. The total pilot test group was 12 individuals and the email invitation to the pilot survey was sent on March 27, 2015. In addition to the instrument itself, pilot test respondents were asked to review the email message that would accompany the link to the survey.

The pilot test survey was built in Survey Gizmo, the chosen online survey management system for the project. The pilot survey respondents were provided special comment areas for each of the survey sections, including: benefit expectancy, cost expectancy, social influence, and facilitating conditions. These comment areas were for the benefit of pilot testers only, and were removed on the final draft of the instrument. Some of the comments of the pilot test group were highly insightful, and many of their suggested edits were incorporated into the pilot survey concurrent with the pilot test period. For instance, the 7-point scale which was mentioned in the informal conversation with the MHHM leader was mentioned again in a comment, as it was not changed at the outset of the pilot test. For instance, one comment by the pilot testers read:

> You need instructions: Please indicate how much you agree or disagree with the following statements. Consider putting the statements in quotations. People will have a hard time distinguishing between slightly & moderately. The 7 point scale is okay, if you think you need that much precision. A 5 point would be more comfortable for respondents. You could also add an unscored "I don't know"

option. You might consider reversing the scale or orienting it horizontally. The long 7 point vertical scale means my mouse has to transverse a long distance to get to Strongly Agree and its much easier to go left to right than top to bottom. The design unconsciously primes lower scores (more disagreement). Are you assuming that all respondents work in businesses whose goal is to improve the health of the community? (e.g., item 3)

This comment was received on March 30, and was immediately incorporated into a revision of the instrument. Similarly, the "I don't know" option for each of the questions was considered, however ultimately abandoned in preference of making each of the questions optional and not mandatory for a response. This latter option also coincided with IRB protocol, in which survey respondents "do not have to answer any questions that make you uncomfortable" and "may stop taking part at any time."

Other comments included clarification for the use of the words "would" and "will," as they were both used in some of the survey language but mean different things. That prompted a revision of several questions in which the word "will" was used, as the original UTAUT instrument did not contain the use of this word in questions to measure independent variables (Venkatesh et al., 2003). Similar phrasing suggestions for revision included "work and/or volunteer opportunities" to be changed to "efforts to improve health in the community." This suggestion was incorporated into the final draft.

The section which measured the dependent variable, behavioral intent to participate, was originally designed as a series of 'sliders' which measured both the use of the dashboard as an information source, and the use of the dashboard as a way to

upload information (e.g. the event calendar, promising practices, relevant reports, and other functions.) The sliders were originally set on a 0-10 scale, and respondents were instructed to leave the slider at 0 to indicate no intent to use the dashboard. As per the original UTAUT instrument, the dependent variables included the words; intend, predict, and plan – making a total of 6 dependent variables. Related to this measurement, more than one pilot test respondent suggested that the interval be increased to 0-100, such as "Let the slider be a scale from 0 to 100 and not tied to 1 to 5 increments. This should be an interval/ratio level item, otherwise don't use the slider." This suggestion, along with two suggestions related to rewording the prompts in this section, was incorporated into the final version of the instrument.

The final section of the pilot survey, which was a measurement of moderators related to the research and theoretical model – such as age, experience in network settings, organizational size and type – was originally separate from 'personal information' which captured respondents' names and email addresses. One pilot test respondent suggested "'Moderators' might not be the best heading. How about just 'Basic information'. Also, you might want to move the name and email parts to here." This suggestion was found to be helpful to streamline the final two sections of the survey instrument, and was in incorporated into the final draft of the instrument. Lastly, another pilot test respondent indicated that it would be important to include a definition of 'network' earlier in the survey than in this final section, in relation to the question: "Please indicate your level of experience participating within networks (here, a network is defined as any combination of three or more individuals and organizations, working together to achieve a common goal).

After a review of all of the comments and suggestions by pilot test respondents and a review of the survey instrument with dissertation committee members, a final draft of the quantitative data collection instrument was developed and submitted to IRB as an amendment for expedited approval. This final draft was reviewed one final time by the evaluation expert associated with UofL SPHIS, as well as an independent copy editor for grammatical errors and appropriate language. The following is an identical presentation of the survey instrument, including headers and instructions for each section, in its final draft:

Network Participation in Public Health

Preamble and Consent

Network Participation in Public Health: The Development of Instruments and Adapted Theory to Predict Stakeholder Participation in a Public Health Network

Date: March 27, 2015
IRB Number: 14.0393

Dear Sir or Madame:

You are being invited to participate in a research study by answering the attached survey about understanding stakeholder intentions to participate in the Mayor's Healthy Hometown Movement. There are no known risks for your participation in this research study. The information collected may not benefit you directly. The information learned in this study may be helpful to others. The information you provide will provide insight to better understand networks and the factors that may or may not influence participation. Your completed survey will be stored at Survey Gizmo. The survey will take approximately 5-10 minutes of your time to complete.

Individuals from the Department of Health Management and System Sciences at the University of Louisville School of Public Health and Information Sciences, the Institutional Review Board (IRB), the Human Subjects Protection Program Office (HSPPO), and other regulatory agencies may inspect these records. In all other respects, however, the data will be held in confidence to the extent permitted by law. Should the data be published, your identity will not be disclosed.

Taking part in this study is voluntary. By completing this survey you agree to take part in this research study. You do not have to answer any questions that make you uncomfortable. You may choose not to take part at all. If you decide to be in this study you may stop taking part at any time.

If you have any questions, concerns, or complaints about the research study, please contact: David Johnson at (502) 468-1752

If you have any questions about your rights as a research subject, you may call the Human Subjects Protection Program Office at (502) 852-5188. You can discuss any questions about your rights as a research subject, in private, with a member of the Institutional Review Board (IRB). You may also call this number if you have other questions about the research, and you cannot reach the research staff, or want to talk to someone else. The IRB is an independent committee made up of people from the University community, staff of the institutions, as well as people from the community not connected with these institutions. The IRB has reviewed this research study.

If you have concerns or complaints about the research or research staff and you do not wish to give your name, you may call 1-877-852-1167. This is a 24 hour hot line answered by people who do not work at the University of Louisville.

Introduction and Instructions

Hello! Thank you for taking the time to participate in this important research. This survey seeks to better understand your intent to use the Healthy Louisville Community Dashboard, an important tool to measure both the health of the city toward our Healthy Louisville 2020 goals and the efforts of the Mayor's Healthy Hometown.

If you are not familiar with the Healthy Louisville Community Dashboard or would like to explore it for more information, click on the picture above and the Dashboard will open in a new window.
This survey is 28 questions long and it should only take you 5-10 minutes to complete. The survey will ask you to provide your name and email, but these will remain confidential for the study. A short, 3-question follow-up survey will be sent to you in about three months.

Thank you again for your time and input!

Benefit Expectancy

Please indicate how much you agree or disagree with the following statements. Any use of the "My/Our" term below refers to you personally or to you and your affiliated organization(s), and "Dashboard" is a shortened phrase referring to the Healthy Louisville Community Dashboard. It is very important that you answer each question to the best of your ability.

1) I would find use of the Healthy Louisville Community Dashboard useful in my/our work to improve health in the community.
( ) Strongly agree
( ) Agree
( ) Neutral
( ) Disagree
( ) Strongly disagree

2) Use of the Dashboard would enable me to be more effective in my work to improve health in the community.
( ) Strongly agree
( ) Agree
( ) Neutral
( ) Disagree
( ) Strongly disagree

3) Use of the Dashboard would increase my/our chances of gaining access to influential community leaders.
( ) Strongly agree
( ) Agree
( ) Neutral
( ) Disagree
( ) Strongly disagree

4) Use of the Dashboard would increase my/our social visibility in the community.
( ) Strongly agree
( ) Agree
( ) Neutral
( ) Disagree
( ) Strongly disagree

_____

Cost Expectancy

Please indicate how much you agree or disagree with the following statements. Any use of the "My/Our" term below refers to you personally or to you and your affiliated organization(s), and "Dashboard" is a shortened phrase referring to the Healthy Louisville Community Dashboard. It is very important that you answer each question to the best of your ability.

5) Use of the Healthy Louisville Community Dashboard would be clear and understandable.

( ) Strongly agree
( ) Agree
( ) Neutral
( ) Disagree
( ) Strongly Disagree

6) Use of the Dashboard would be a good use of my time and efforts.

( ) Strongly agree
( ) Agree
( ) Neutral
( ) Disagree
( ) Strongly disagree

7) Use of the Dashboard would assist my/our participation in the Mayor's Healthy Hometown.

( ) Strongly agree
( ) Agree
( ) Neutral
( ) Disagree
( ) Strongly disagree

8) If necessary, learning to use the Dashboard would be easy.

( ) Strongly agree
( ) Agree
( ) Neutral
( ) Disagree
( ) Strongly disagree

_____

Social Influence
Please indicate how much you agree or disagree with the following statements. "Dashboard" is a shortened phrase referring to the Healthy Louisville Community Dashboard. It is very important that you answer each question to the best of your ability.

9) People who care about me professionally think that I should use the Healthy Louisville Community Dashboard.
( ) Strongly agree
( ) Agree
( ) Neutral
( ) Disagree
( ) Strongly disagree

10) People who are important to me think that I should use the Dashboard.
( ) Strongly agree
( ) Agree
( ) Neutral
( ) Disagree
( ) Strongly Disagree

11) The leadership of the Mayor's Healthy Hometown would be helpful with the use of the Dashboard.
( ) Strongly agree
( ) Agree
( ) Neutral
( ) Disagree
( ) Strongly disagree

12) In general, my employer would be supportive of the use of the Dashboard.
( ) Strongly agree
( ) Agree
( ) Neutral
( ) Disagree
( ) Strongly disagree

Facilitating Conditions
Please indicate how much you agree or disagree with the following statements. Any use of the "My/Our" or "I/We" terms below refers to you personally or to you and your affiliated organization(s), and "Dashboard" is a shortened phrase referring to the Healthy Louisville Community Dashboard It is very important that you answer each question to the best of your ability.

13) I/we have the IT resources necessary to use the Healthy Louisville Community Dashboard.
( ) Strongly agree
( ) Agree
( ) Neutral
( ) Disagree
( ) Strongly disagree

14) I/we have the knowledge necessary to use the Dashboard.
( ) Strongly agree
( ) Agree
( ) Neutral
( ) Disagree
( ) Strongly disagree

15) The use of the Dashboard would not conflict with my/our work to improve health in the community.
( ) Strongly agree
( ) Agree
( ) Neutral
( ) Disagree
( ) Strongly disagree

16) A specific person (or group) is available to assist with difficulties related to the use of the Dashboard.
( ) Strongly agree
( ) Agree
( ) Neutral
( ) Disagree
( ) Strongly disagree

_____

Behavioral Intention to Use the Healthy Louisville Community Dashboard
For the following three questions, leave the slider at 0 if you have no intention to use the dashboard, or move it up to 100 the strongest intention to use the dashboard. It is very important that you answer each question to the best of your ability.

17) I intend to use the Healthy Louisville Community Dashboard in the next 3 months.
To visit the dashboard for information
0_____[__]_____ 100
To contribute content to the dashboard
0_____[__]_____ 100

18) I predict I will use the Healthy Louisville Community Dashboard in the next 3 months.
To visit the dashboard for information
0_____[__]_____ 100
To contribute content to the dashboard
0_____[__]_____ 100

19) I plan to use the Healthy Louisville Community Dashboard in the next 3 months.
To visit the dashboard for information
0_____[__]_____ 100
To contribute content to the dashboard
0_____[__]_____ 100

_____

Network Social Structure
A network is defined as any combination of three or more individuals and organizations, working together to achieve a common goal. For the following two questions, please list as many responses as possible. You can leave blanks if necessary, but it is very important that you answer each question to the best of your ability.

20) List 5 people you know well who participate within the Mayor's Healthy Hometown network (first and last names, please):
Person 1: _____
Person 2: _____
Person 3: _____
Person 4: _____
Person 5: _____

21) List 5 people, organizations, or other networks that may not be currently affiliated with the Mayor's Healthy Hometown network, but you feel should be (for people, first and last names, please):
Answer 1: _____
Answer 2: _____
Answer 3: _____
Answer 4: _____
Answer 5: _____

_____

Basic Information

The following information will remain strictly confidential. Neither your name or email will not be used in any written reports, nor will they be distributed to third parties. This information is important for the research, but the safety and confidentiality of your information is of the most importance. A short, 3 question follow-up survey will be sent to you in a few months.

22) What is your Name?*

_____

23) What is your email address on the Mayor's Healthy Hometown mailing list?*

_____

24) Please indicate which age range you fall within:*
( ) 21 and under
( ) 22 to 34
( ) 35 to 44
( ) 45 to 54
( ) 55 to 64
( ) 65 and over
( ) Decline

25) Please indicate your gender identity:*
( ) Male
( ) Female
( ) Other
( ) Decline

26) Please indicate your level of experience participating within networks (here, a network is defined as any combination of three or more individuals and organizations, working together to achieve a common goal):*
( ) Very High Experience
( ) High Experience
( ) Moderate Experience
( ) Low Experience
( ) Very Low Experience

27) Please indicate the size of your employer:*
( ) Self-employed
( ) 2-20 employees
( ) 21-100 employees
( ) 101-300 employees
( ) 301-999 employees
( ) 1000+ employees

28) Please indicate the type of your employer:*
( ) Unemployed
( ) Nonprofit
( ) Government
( ) Academic
( ) Healthcare
( ) Other (required): _____*

_____
Thank You!

Thank you for taking our survey. Your response is very, very important to us. You will receive a 3-question follow-up survey in about 3 months to the email address you provided.

Quantitative Data Collection

Quantitative data collection began in coordination with the Louisville Metro Department of Public Health and Wellness, lead agency for the MHHM and administrator of the MHHM email listserve. Part of this coordination included the principle investigator becoming an unpaid intern with the Health Department, thereby eliminating conflicts with access to the email lists as a third party researcher. Internship status was granted in February 1, 2015, and preliminary access to the MHHM listserve was provided the following day as well as access to the Healthy Hometown Facebook page. At that time, the listserve contained 4428 contacts, and provided in this data were three categories of information: contact—an email address; origin—how the email was added to the list; and subscription created—date (month/day/year, time) in which email was added to the list. Any other information about contacts on the MHHM listserve did not exist.

Due to the lack of demographic data related to this email mailing list, other electronic media populations related to MHHM, such as the Healthy Hometown Facebook page, were assessed for general comparisons. On their Facebook page, there are approximately 1514 'likes' (as of June 6, 2015) or people following posts to the page. The MHHM Facebook page was launched on July 29, 2011, and has grown in use and user following since that time.

Healthy Hometown Facebook Page as of June 6, 2015			
Facebook Insights		**Total Number of Users**	
Total Likes		1514	
Users in USA		1465	
Users in Louisville		1132	
Users in KY (less Louisville) and IN		135	
Females		1136	
Males		378	
Demographics			
Females		**Males**	
18-24	3%, 45	18-24	.73%, 11
25-34	21%, 318	25-34	7%, 106
35-44	24%, 363	35-44	7%, 106
45-54	16%, 242	45-54	4%, 61
55-64	7%, 106	55-64	3%, 45
65+	3%, 45	65+	2%, 30

Table 4: Healthy Hometown Facebook Page Profile

It is clear from the table above, that the population of individuals following this particular Facebook page is overwhelmingly female, at 75% or 1136 unique users. This demographic of mostly female is much larger than the total Facebook population, where men are actually in the majority of users, at 54% of total unique users.

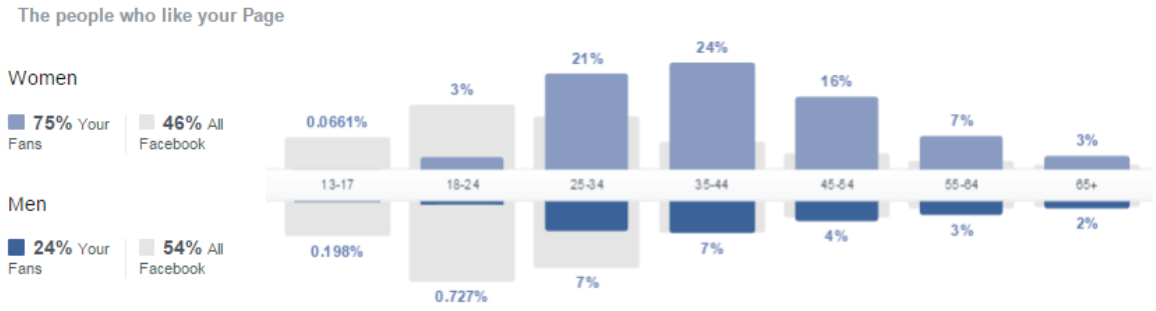

Figure 8: Healthy Hometown Facebook Insights

Also clear from the Facebook Analytics and Page Insights, is that the Healthy Hometown page does well to focus targeted efforts to users mostly in Louisville, where 74.77% or 1132 unique users, reside according to their personal information. The Healthy Hometown Facebook page also captures a young cross section of users, whereby nearly one third of the total users, 31.73% or 480 total men and women, are aged 34 or younger. Though the Facebook page and the MHHM email mailing list are certainly not connected, there is likely overlap in these two populations, as individuals interested in the efforts of MHHM may both subscribe to the email listserve and follow the Facebook page. The comparison of Facebook subscriber demographics to the respondent profile will be addressed further in this section, as well as again in the limitations.

The final draft of the quantitative instrument was submitted for expedited approval to the University of Louisville Institutional Review Board after the pilot testing had been completed and the appropriate changes had been incorporated. The instrument was submitted as an expedited amendment, as per the original study methodology dictated and was required by university IRB. Approval for this instrument was received on April 2, 2015. Upon receipt of approval, more coordination with the Health Department commenced. The message to be included in the email was also vetted by those who participated in the pilot testing, and appropriate edits were incorporated into the final draft. The survey was finalized in Survey Gizmo and an open URL was generated which directed users to the preamble of the instrument. This finalized message and included URL were submitted to Health Department officials to deploy to the MHHM mailing list. Though the researcher had access to the list of email addresses, it was decided that any emailed messages to this listserve needed to come directly from the

Health Department through the GovDelivery mail delivery system. This ran counter to some of the recommendations made by MHHM leadership in the focus group; however it was unavoidable and necessary to satisfy some of the concerns of other MHHM leadership. As such, the researcher had little control over the frequency of emails, both in invitations to the survey and reminder emails, which will be discussed further in the limitations.

The first deployment of the emailed message and link to the survey went out on Monday, April 13, 2015, to not only the MHHM mailing list, but also to mailing lists to subscribers of the Active Living, Chronic Disease Prevention, Healthy Eating, and Tobacco Prevention Committees. The inclusion of these MHHM subcommittees explains the increase in number of recipients from the original MHHM provided to the researcher. The MHHM list contained 4428 unique contacts at the time of the first survey deployment, and this was the only list which was made available. Subsequent emails to the mailing list and included subcommittees, with updated messages and the same URL, went out on the following two Mondays—on April 20 and April 27—and no other messages or reminders were sent to the mailing list. The data collection period lasted 28 days, and the instrument was closed on May 4, 2015 to additional respondents. No additional emails or reminders were sent to the listserve as a precaution to prevent message burnout, or in caution that people would possibly unsubscribe to the mailing list altogether.

One advantage of sending the email directly through the health department using their GovDelivery delivery system, was that this system has built-in analytic capabilities which allow health department officials to track certain aspects of the email, including;

open rate and the number of times unique users clicked on the link to the survey. GovDelivery use statistics:

GovDelivery Analytic Statistics Per Email			
Email Attempt	Delivered Emails	Unique Opens	Unique Survey Link Clicks
First, 4/13/15	5021	1220 (24%)	399
Second, 4/20/15	5022	1108 (22%)	352
Third, 4/27/15	5017	1075 (21%)	137

Table 5: GovDelivery Statistics for Survey Deployment

One unforeseen disadvantage, however, was that by sending it through the GovDelivery system, the URL to the survey housed on Survey Gizmo was flagged by built-in antivirus protocols. As a result, clicking on the link from the email generated a McAfee Antivirus warning message, and prevented listserve subscribers from going directly to the survey. This caused several listserve users to contact the researcher directly, and prevented several others from continuing on to the survey with one additional mouse click on the URL generated in the warning message. Below is a table with those GovDelivery use statistics and analytic information from Survey Gizmo regarding weekly usage statistics:

Effect of the McAfee URL Redirect				
Email Attempt (week)	Unique Survey Link Clicks	Total Surveys Attempted (week)	Total Surveys Completed (week)	Relative Redirect Affect
First, 4/13/15	399	229	91	57.4%
Second, 4/20/15	352	224	103	63.6%
Third, 4/27/15	137	122	46	89.1%
Total	888	575	240	64.8%

Table 6: Effect of McAfee Antivirus Redirect

It is clear from the table above that the McAfee redirect had a significant impact on response rate. An included message, warning potential respondents about the redirect was included in the second and third email messages, which appears to have helped to increase responses in these subsequent data collection attempts.

With that said, the survey was deployed using a 'multiple touch' methodology as prescribed by Don Dillman (Dillman, 2011), with multiple attempts and/or reminders for the data collection period. Data was compiled and stored in the Survey Gizmo interface automatically over the four-week period that the survey was available, and closed to additional surveys on May 4, 2015. At this time, there were 245 collected complete responses (this number differs from the total in the above table due to 5 duplicate respondents ultimately being removed from the analysis) and an additional 336 partial surveys. The partial surveys varied in degree of completion from potential respondents following the link and not answering a single question, to more than half of the questions answered in various sections. Ultimately the partial surveys were disqualified on a case-by-case basis, with the assumption that information regarding independent, dependent, and moderator variables all needed to be present for the case to be considered complete. The survey link was also made available by a single post to the Healthy Hometown

Facebook page. This generated an additional 5 completed responses and another 21 partial responses. These 5 additional respondents were added to the pool of total respondents, bringing the total to 245. Two cases were found to be a generated by a single respondent with partial responses on each, and these were compiled to create a single case, bringing the final number of respondents from both the MHHM listserve and Facebook collection to 244 (n=244).

The MHHM email list, of 4428 total contacts (as of April 17, 2015), provided some insights in domain demographics relative to its similarities with the respondent profile. Below is a table containing comparisons of the MHHM listserve to the respondent profile:

Mayor's Healthy Hometown Research Respondent Profile					
Respondents Matched to Listserv	193 (79.1%)				
Respondents Unmatched to Listserv	51 (20.9%)				
Respondent Population Representativeness Total Unique Listserve Addresses: 4428 Total Unique Listserve Domains: 589 (13.3% of total Listserve) Total Unique Respondent Addresses: 244 Total Unique Respondent Domains: 69 (28.3% of total Population)					
Mayor's Healthy Hometown Respondent Profile		Mayor's Healthy Hometown Listserve Profile			
Most Common Domains	**Number of Unique Users per Domain**	**Most Common Email Services**	**Number of Unique Users per Domain**	**Most Common Local Domains**	**Number of Unique Users per Domain**
gmail.com	41 (16.8%)	gmail.com	770 (17.4%)	nortonhealthcare.org	213 (4.8%)
louisvilleky.gov	28 (11.5%)	yahoo.com	662 (15.0%)	louisvilleky.gov	197 (4.4%)
yahoo.com	19 (7.8%)	insightbb.com	287 (6.5%)	jefferson.kyschools.us	95 (2.1%)
aol.com	14 (5.7%)	aol.com	261 (5.8%)	louisville.edu	62 (1.4%)
nortonhealthcare.com	11 (4.5%)	hotmail.com	246 (5.6%)	humana.com	42 (0.9%)
hotmail.com	10 (4.1%)	bellsouth.net	156 (3.5%)	ky.gov	38 (0.86%)
bellsouth.net	10 (4.1%)	twc.com	78 (1.8%)	bellermine.edu	19 (0.4%)
twc.com	8 (3.3%)	att.net	76 (1.8%)	ymcalouisville.org	19 (0.4%)
louisville.edu	7 (2.9%)	msn.com	42 (0.9%)	sevencounties.org	17 (0.4%)
humana.com	7 (2.9%)			passporthealthplan.com	15 (0.3%)
bellermine.edu	5 (2.0%)				

Table 7: Study Respondent Profile Representativeness to MHHM Listserve

The most common domains in both the respondent profile and listserve were reviewed and it follows that they are both different and similar in a variety of ways. Primarily in that the total number of respondents, 244, was a fraction of the 4428 contacts on the original MHHM listserve, at a little over 5.5%. However, to get a better idea of how these respondents represented the MHHM listserve, each email address was hand-matched to the original listserve. A positive ID match was obtained for 193 of the total

244 respondents, or 79.1% of the total respondent population. The other 51 respondents (20.9%) to the survey are not necessarily unrepresented on the MHHM mailing list, as there could have been respondents that provided an alternate email address to the one listed on the MHHM listserve, or they may have been on one of the specific committee lists and not on the MHHM listserve. That aspect for the representativeness of the survey population will be discussed further in the limitations.

Similar to the MHHM listserve, there were many email domains that contained only one or just a few survey respondents, though at a much greater a level of unique domains that could be observed from the analysis of the MHHM listserve. Within the original listserve, there were 589 unique domains, or 13.3% within the total listserve. However in the respondent profile, 69 total domains were observed or 28.3% of the total respondent pool. This uniqueness of domains indicates that the respondent population is more diverse with respect to single-user domains represented

Certain domains in the respondent pool were overrepresented as compared to the MHHM listserve, particularly the louisvilleky.gov domain. This domain accounted for 197 contacts in the original listserve, or 4.4% of the total, whereas in the respondent pool, 28 louisvilleky.gov contacts completed surveys, or 11.5% of the total study population. Other domains, such as nortonhealthcare.com, were almost exactly represented equally in both the MHHM listserve and the respondent pool. This domain accounted for 213 contacts, or 4.8% of the MHHM listserve, and 11 respondents, or 4.5% of the study population.

Moving on from a comparison of the respondent pool to the MHHM, there were many factors and information gathered from the respondents that was unavailable from

the information on the MHHM listserve as a whole. This information includes that, which pertains to the moderators in the causal model, including: age, gender, experience working within networks, organizational size, and organizational type. In instances of gender and age, these categories are compared to the Healthy Hometown Facebook page insights for comparison.

The distribution of age categories in the respondent pool is outlined in the following table:

Mayor's Healthy Hometown Respondent Profile Age		
Category (in years)	Total Respondents	Percent of Respondents
21 and under	0	0%
22 to 34	25	10.2%
35 to 44	49	20.1%
45 to 54	77	31.6%
55 to 64	68	27.9%
65 and over	24	9.8%
Declined	1	.4%
Total	244	100%

Table 8: Study Respondent Profile 4

The age ranges for the respondent profile, as outlined in the survey, differ slightly from those provided by Facebook Page Insights. The main difference between the respondent profile and the Facebook demographics is that the respondent profile trended older than subscribers to the Facebook Page. For instance, only 10.2% of the respondent pool was age 34 or younger, whereas 28.3% of the Healthy Hometown Facebook audience falls into this same range. Similarly for the other end of the age spectrum, 37.7% of respondents were age 55 or older, whereas only 15% of the Facebook page

subscribers fall into this category. The respondent pool is normally distributed around the 45 to 54 age category.

Gender in the respondent profile, on the other hand, mimics the Facebook page demographic very closely. The table below outlines responses related to gender by respondents:

Mayor's Healthy Hometown Respondent Profile Gender		
Category	Total Respondents	Percent of Respondents
Male	66	27%
Female	176	72.1%
Other or Declined	2	.8%
Total	244	100%

Table 9: Study Respondent Profile 5

This ratio of females to males, about 3:1 is identical to the Health Hometown Facebook demographic. In the Facebook page population, 75% are female and 24% are male, again similar to the 72.1% and 27% for females and males among the survey respondents, respectively. Both of these populations, in the survey respondents and the Facebook page subscribers, are much more heavily concentrated with females compared to the total Facebook demographic, which is actually 46% female and 54% male. This gender ratio is to be somewhat expected, as public health in general tends to be much more female dominated discipline.

The final individual-level moderator deals with experience in network settings. This construct is specific to the survey instrument and does not have an external source with which to validate, however, all 244 of the survey respondents provided a response related to this moderator. These results are outlined in the following table:

Mayor's Healthy Hometown Respondent Profile Network Experience		
Category	Total Respondents	Percent of Respondents
Very High Experience	74	30.3%
High Experience	73	29.9%
Moderate Experience	70	28.7%
Low Experience	18	7.4%
Very Low Experience	9	3.7%
Total	244	100%

Table 10: Study Respondent Profile 6

More than half of the respondents (n=143, 60.2%) indicated either a high or very high level of experience working in network-level settings. This was understandable as public health is a multidisciplinary field, which often necessitates the expertise of a variety of professionals, various organizations, and even entre networks (Hasnain-Wynia, Margolin, & Bazzoli, 2001). More than one in four respondents indicated a moderate level of experience in working in network settings (n=70, 28.7%). Low or very low experience working in network settings accounted for only a small portion of the total respondent population, where 27 respondents (or 11.1%) indicated one of these two options.

Moving now to employer, or organizational level moderators in the causal model, these include two categories in the causal model and were assessed through two questions on the survey, which include: organizational type and organizational size. Organizational type was assessed through a single question, providing respondents with five response categories: unemployed, nonprofit, government, academic, and healthcare. In addition to these was another category, in which respondents provided open-ended information related to their employer type. These 'other' responses were assessed on a case by case level, and transformed using a combination of Microsoft Excel and SPSS. The resulting

analysis identified a need to incorporate these responses and those of the other five categories into seven separate categories total, as well as a missing data category. The new categories which best represented the responses provided for organization type, included: nonprofit, government, education, healthcare, for profit, and none. The responses for these new categories are outlined in the following table:

Mayor's Healthy Hometown Respondent Profile Organizational Type		
Category (industry)	Total Respondents	Percent of Respondents
Nonprofit	55	22.5%
Government	44	18%
Education	33	13.5%
Healthcare	52	21.3%
For Profit	47	19.3%
None	11	4.5%
Missing Data	2	.8%
Total	244	100% (.01% round error)

Table 11: Study Respondent Profile 7

It was clear for the assessment that the majority of the 'other' responses fell into the 'for profit' organizational type, and necessitated the creation of this new category. Similarly, several respondents indicated they were retired. This is certainly different from 'unemployed,' but the creation of a new 'none' category was appropriate for both unemployed and retired individuals. Lastly, still more 'other' responses indicated employment in education other than academia. These responses and the original responses for the academia category were combined into a new response category of education. Transforming the data into these new response categories was an ideal way of

capturing the organizational type for all respondents, less the 2 respondents who declined to respond via the 'other' category response (n=2 or .8%).

The responses for organizational type of nonprofit (n=55 or 22.5%), government (n=44 or 18%), healthcare (n=52 or 21.3%), and for profit (n=19.3%), were fairly evenly distributed within 4.5% of the total pool of respondents. Education was the next highest response category, accounting for 33 of the total respondents (or 13.5%). Other than the aforementioned missing data category, the newly created 'none' category was had the fewest respondents (n=11 or 4.5%.)

The same 'none' category was needed for the second organizational level moderator as well. Organizational size was also assessed through a single question with six original response categories, including: self-employed, 2-20 employees, 21-100 employees, 101-300 employees, 301-999 employees, and 1000 or more employees. These six categories and the newly created category 'none,' accounted for all 244 respondents. The following table outlines the results of these responses:

Mayor's Healthy Hometown Respondent Profile Organizational Size		
Category (number of employees)	Total Respondents	Percent of Respondents
2-20	34	13.9%
21-100	28	11.5%
101-300	31	12.7%
301-999	23	9.4%
1000+	96	39.3%
Self-employed	21	8.6%
None	11	4.5%
Total	244	100%

Table 12: Study Respondent Profile 8

Clearly a majority of the respondents fell into the largest organizational size response category, where 96 respondents (or 39.3%) indicated employment in organizations with more than a thousand employees. A small number of respondents indicated that they were self-employed (n=21 or 8.6%), and the same 11 (or 4.5%) respondents for organizational type also fell into the 'none' category for organizational size. Respondents fell into the four remaining response categories with close distribution, including organizations with 2-20 employees (n=34 or 13.9%), 21-100 employees (n=28 or 11.5%), 101-300 employees (n=31 or 12.7%), and 301-999 employees (n=23 or 9.4%). These remaining categories were within 4.5% of the total pool of respondents.

Moving now to descriptive statistics related to the independent variables of the study, these variables and their related questions will be discussed and organized by category, including: benefit expectancy, cost expectancy, social influence, and facilitating conditions. Each of these four categories has four associated questions. For each category, a description of the questions, the qualitative insights they represent, and response rates will be provided. Those questions found to be statistically significant and correlated with intent to participate will be highlighted in the analytic section of the results. The following categories will be presented in the order they appeared on the quantitative instrument (which followed the UTAUT outline), and not the order in which they appear in the causal model.

Benefit Expectancy

Respondents' perception of benefits related to the use of the community dashboard was evaluated using four questions under the benefit expectancy category. These questions comprised the first set respondents answered directly following the preamble consent. These questions are outlined in the following table, and any use of 'my/our' referred to either the individual and/or the organization to which the individual was affiliated, a distinction that was made clear in the instructions:

Benefit Expectancy: Questions	
Question ID	**Question Text**
BE1	I would find use of the Healthy Louisville Community Dashboard useful in my/our work to improve health in the community.
BE2	Use of the Dashboard would enable me to be more effective in my work to improve health in the community.
BE3	Use of the Dashboard would increase my/our chances of gaining access to influential community leaders.
BE4	Use of the Dashboard would increase my/our social visibility in the community.

Table 13: Benefit Expectancy Questions

The results of this question set have been compiled into the following table:

Benefit Expectancy: Results						
Question ID	n, %					
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Missing Data
BE1	55, 22.5%	136, 55.7%	45, 18.4%	6, 2.5%	2, 0.8%	0, 0%
BE2	38, 15.6%	121, 49.6%	59, 24.2%	9, 3.7%	1, 0.4%	16, 6.6%
BE3	28, 11.5%	86, 35.2%	84, 34.4%	26, 10.7%	5, 2.0%	15, 6.1%
BE4	30, 12.3%	89, 36.5%	83, 34.0%	24, 9.8%	2, 0.8%	16, 6.6%

Table 14: Benefit Expectancy Question Responses

Question BE1 assessed a theme which was addressed in both the original UTAUT instrument and the qualitative data, which was the technology use as it pertains to usefulness. As such, over three fourths of the respondents (n=191 or 78.2%) indicated that they either agreed or strongly agreed that the use of the Healthy Louisville community dashboard would be useful in efforts to improve the health of the community. Only 8 respondents (or 3.3%) either disagreed or strongly disagreed with this statement, whereas nearly one fifth of the respondent pool (n=45 or 18.4%) remained neutral in their perception of the dashboard's usefulness.

Question BE2 followed in the same reasoning as the previous question, in that use of this technology related to increased effectiveness, was also a theme of both the UTAUT instrument and the qualitative insights. Nearly two thirds of respondents (n=159, or 65.2%) agreed or strongly agreed that the use of the community dashboard would enable them to be more effective in their work to improve the health of the community. Only 10 respondents (or 4.1%) of the respondent population disagreed or strongly disagreed with this statement, though nearly one out of four respondents (n=59, or 24.2%) remained neutral in their perception of increased effectiveness as the result of using the community dashboard.

Question BE3 diverged from the original UTAUT themes and was built around a concept that emerged from the interviews with MHHM leadership. This theme, related to the use of the dashboard as a means to gain access to influential leadership in the community, was unique to this network context. A significantly smaller portion of survey respondents agreed or strongly agreed with this statement (n=114, or 46.7%) than the previous questions. About one third of respondents (n=84, or 34.4%) remained neutral, and 31 total respondents (or 12.7%) either disagreed or strongly disagreed that the use of the dashboard would enable them to gain access to influential community leaders.

The final question in the benefits expectancy section, question BE4, again diverged from the original UTAUT instrument, and was directly related to qualitative insight from the MHHM leadership focus group. This insight pertained to the use and purpose of the dashboard to date, where a local community group submitted their work to the dashboard as a promising practice, thereby increasing awareness of their activities in the community via the dashboard interface. Again, fewer than half of the respondents agreed or strongly agreed (n=119, or 48.8%) that the use of the dashboard would benefit their individual and/or their organization's social visibility in the community in this way. More than a third of respondents (n=83, or 34.0%) remained neutral to this statement, and another 26 respondents (or 10.6%) either disagreed or strongly disagreed with this statement.

Cost Expectancy

Similar to the benefits section, respondents' perception of costs related to the use of the community dashboard was evaluated using four questions under the cost expectancy category. These questions comprised the second set respondents answered directly following the benefits section and preceding social influence. These questions are outlined in the following table, and as before, any use of 'my/our' referred to either the individual and/or the organization to which the individual was affiliated, a distinction that was made clear in the instructions as well:

Cost Expectancy: Questions	
Question ID	**Question Text**
CE1	Use of the Healthy Louisville Community Dashboard would be clear and understandable.
CE2	Use of the Dashboard would be a good use of my time and efforts.
CE3	Use of the Dashboard would assist my/our participation in the Mayor's Healthy Hometown.
CE4	If necessary, learning to use the Dashboard would be easy.

Table 15: Cost Expectancy Questions

The results of this question set have been compiled into the following table:

Cost Expectancy: Results						
Question ID	n, %					
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Missing Data
CE1	32, 13.1%	144, 59.0%	53, 21.7%	11, 4.5%	4, 1.6%	0, 0%
CE2	30, 12.3%	132, 54.1%	53, 21.7%	12, 4.9%	3, 1.2%	14, 5.7%
CE3	47, 19.3%	138, 56.6%	34, 13.9%	9, 3.7%	1, 0.4%	15, 6.1%
CE4	40, 16.4%	134, 54.9%	49, 20.1%	6, 2.5%	2, 0.8%	13, 5.3%

Table 16: Cost Expectancy Question Responses

Question CE1followed themes from both the original UTAUT instrument and the insights gained from the qualitative data collection. This question was specifically aimed at assessing whether respondents felt that the use of the dashboard would be clear and understandable, e.g. in terms of what specific purposes and contributions the use of the dashboard might entail. Nearly three out of four respondents (n=176, or 72.1%) either agreed or strongly agreed that their use of the dashboard would be clear and understandable. Another fifth of respondents (n=53, or 21.7%) remained neutral in their response to this statement, and only 15 total respondents (or 6.1%) disagreed or strongly disagreed that the dashboard use would be clear and understandable.

The next question, CE2, was thematically identical to one identified in the original UTAUT instrument, but was verified through a discussion in the MHHM leadership focus group, with a unanimous agreement that the time and effort required for the use of the dashboard was an important cost consideration. With that said, two thirds of respondents (n=162, or 66.4%) agreed or strongly agreed with the assertion that the use of the community dashboard would indeed be a good use of their time and efforts. As with the previous question, one out of five respondents (n=53, or 21.7%) remained

neutral with this statement, and 15 total respondents (or 6.1%) either disagreed or strongly disagreed that the dashboard use would be a good use of their time and efforts.

Question CE3 diverged from the themes of the original UTAUT instrument, and was more related to the use of the dashboard in general as a participation opportunity for respondents to engage with the MHHM network. This question resulted from qualitative insights from the interviews with MHHM leadership, specifically, in that there were multiple participation opportunities identified. The agreement for the use of the community dashboard as a participation opportunity by MHHM leadership focus group, combined with the same justification that was identified in the participation opportunity analysis, CE3 highlighted this use of the community dashboard as a participation opportunity. Indeed, slightly more than three fourths of respondents (n=185, or 75.9) either agreed or strongly agreed with this statement. Only 34 total respondents (or 13.9%) remained neutral, and only 10 total respondents (or 4.1%) disagreed or strongly disagreed that the dashboard use would assist individual and/or organizational participation in the network.

Lastly, Question CE3 followed from themes in both the original UTAUT instrument and qualitative insights, and in particular those insights gleaned from the focus group with MHHM leadership. These insights specifically indicated that the MHHM community dashboard was not necessarily user friendly or intuitive in the way the dashboard website was organized. Still, 174 total respondents (or 71.3%) agreed or strongly agreed that if necessary; learning to use the dashboard would be easy for them. One out of five respondents (n=49, or 20.1%) remained neutral in their response to this

statement, and only 8 other respondents (or 3.3%) disagreed or strongly disagreed with this assertion.

Social Influence

Similar to the previous sections, respondents' perceived social influence related to the use of the community dashboard was evaluated using four questions under the social influence category. These questions comprised the third set respondents answered directly following the costs section and preceding facilitating conditions. These questions are outlined in the following table, and as in the previous sections, any use of 'my/our' referred to either the individual and/or the organization to which the individual was affiliated, a distinction that was made clear in the instructions as well:

Social Influence: Questions	
Question ID	**Question Text**
SI1	People who care about me professionally think that I should use the Healthy Louisville Community Dashboard.
SI2	People who are important to me think that I should use the Dashboard.
SI3	The leadership of the Mayor's Healthy Hometown would be helpful with the use of the Dashboard.
SI4	In general, my employer would be supportive of the use of the Dashboard.

Table 17: Social Influence Questions

The results of this question set have been compiled into the following table:

Social Influence: Results						
Question ID	n, %					
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Missing Data
SI1	8, 3.3%	46, 18.9%	125, 51.2%	44, 18.0%	17, 7.0%	4, 1.6%
SI2	11, 4.5%	37, 15.2%	120, 49.2%	41, 16.8%	17, 7.0%	18, 7.4%
SI3	33, 13.5%	130, 53.3%	53, 21.7%	6, 2.5%	2, 0.8%	20, 8.2%
SI4	47, 19.3%	107, 43.9%	58, 23.8%	10, 4.1%	4, 1.6%	18, 7.4%

Table 18: Social Influence Question Responses

Question SI1 slightly diverged from the language used in the original UTAUT instrument, in large part due to insights gained from the MHHM leadership focus group. In UTAUT, this question was phrased "people who influence my behavior," though the qualitative focus group participants felt that this language was too authoritative given the context and climate of the MHHM network. With this in mind, the phrasing "people who care about me professionally" was intended to soften this authoritative connotation, though not moving away entirely from this original theme. With that said, more than half of the respondents (n=125, or 51.2%) remained neutral to the idea that professional peers think they should use the Healthy Louisville community dashboard. Only about one fifth of respondents (n=54, or 22.2%) either agreed or strongly agreed with this statement, and one out of four respondents (n=61, or 25.0%) disagreed or strongly disagreed that professional peers think they should use the dashboard.

The next question, SI2, was both thematically and in language identical to the original UTAUT instrument. Similar to the previous question, nearly half of total respondents (n=120, or 49.2%) remained neutral to the assertion that people important to the respondent think they should use the community dashboard. Similar to the previous question still, less than 20% of total respondents (n=48, or 19.7%) either agreed or

strongly agreed with this statement, and nearly one fourth of the total respondents (n=58, or 23.8%) either disagreed or strongly disagreed that people important to them should use the community dashboard.

Question SI3 was again was both thematically and in language identical to the original UTAUT instrument, though the context was changed to be more specific to the MHHM network and its leadership. Insights from the focus group indicated the leadership, specifically in terms of the community coalition subcommittees, would be supportive and interested in respondent perceptions related to this support. SI3 was by far more supported by respondents, where more than two thirds (n=166, or 66.8) either agreed or strongly agreed with this assertion. Slightly more than one fifth of respondents (n=53, or 21.7%) remained neutral related to this statement, and only 8 total respondents (or 3.3%) disagreed or strongly disagreed that leadership of MHHM would be supportive of dashboard use. It should be noted, however, that this question among all 16 questions in each of the independent variable categories, had the highest number of missing responses, whereby 20 respondents (or 8.2%) did not answer this survey question.

Lastly, Question SI4 was very similar to the theme in the original UTAUT instrument, though the context was changed from that of internal organizational support, to a network-level context of support from the respondent's employer. Both the interviews and the MHHM leadership focus group echoed this sentiment, in that certain community organizations may or may be more supportive than others for the use of the community dashboard. Nearly two thirds of respondents (n=154, or 63.2%) agreed or strongly agreed that their employers would be supportive of the use of the community dashboard. Nearly one out of four respondents (n=58, or 23.8%), however, remained

neutral to this assertion. Only 14 total respondents (or 5.6%) disagreed or strongly disagreed that their employers would be supportive of their use of the community dashboard.

Facilitating Conditions

In the fourth and final section, respondents' perception of facilitating conditions related to the use of the community dashboard was evaluated using four questions under the facilitating conditions category. These questions comprised the last set respondents answered directly following the social influence section and preceding the section which evaluated the dependent variable set for behavioral intent to participate. These questions are outlined in the following table, and as in the previous sections, any use of 'my/our' referred to either the individual and/or the organization to which the individual was affiliated, a distinction that was made clear in the instructions:

Facilitating Conditions: Questions	
Question ID	**Question Text**
FC1	I/we have the IT resources necessary to use the Healthy Louisville Community Dashboard.
FC2	I/we have the knowledge necessary to use the Dashboard.
FC3	The use of the Dashboard would not conflict with my/our work to improve health in the community.
FC4	A specific person (or group) is available to assist with difficulties related to the use of the Dashboard.

Table 19: Facilitating Conditions Questions

The results of this question set have been compiled into the following table:

Facilitating Conditions: Results						
Question ID	n, %					
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Missing Data
FC1	44, 18.0%	132, 54.1%	45, 18.4%	20, 8.2%	2, 0.8%	1, 0.4%
FC2	33, 13.5%	132, 54.1%	43, 17.6%	17, 7.0%	4, 1.6%	15, 6.1%
FC3	48, 19.7%	136, 55.7%	35, 14.3%	3, 1.2%	4, 1.6%	18, 7.4%
FC4	15, 6.1%	62, 25.4%	109, 44.7%	35, 14.3%	8, 3.3%	15, 6.1%

Table 20: Facilitating Conditions Responses

In terms of each of the four questions related to facilitating conditions, themes and language were both derived from the original UTAUT instrument, and each of these four questions were discussed in the focus group with MHHM leadership, in which those qualitative insights confirmed that these were appropriate. As such, Question FC1 was identical to the UTAUT instrument, with the inclusion of the 'I/we' concept to include respondent organizational affiliation when appropriate. Nearly three fourths of the respondents (n=176, or 72.1%) either agreed or strongly agreed that they had the necessary IT resources to use the community dashboard. Less than one out of five respondents (n=45, or 18.4%) indicated a neutral response to this statement, and another 22 respondents (or 9.0%) either disagreed or strongly disagreed that they and/or their organization possessed those necessary IT resources.

Again, identical in theme and language to the original UTAUT instrument, Question FC2 related to the knowledge necessary to use the community dashboard. This differed slightly from Question CE4, framing this knowledge as a perceived facilitating condition as opposed to a potential cost in terms of time and the process of learning to

use the community dashboard. As such, more than two thirds of respondents (n=165, or 67.6%) agreed or strongly agreed to this statement. Less than one out of five respondents (n=43, or 17.6%) were neutral to this assertion, and 21 total respondents (or 8.6%) either disagreed or strongly disagreed that they and/or their organization had the knowledge necessary to use the dashboard.

Question FC3 differed in language from the original UTAUT instrument, but was very similar in theme. Insights gained, specifically from the MHHM focus group, warranted language that touched on compatibility between the use of the dashboard and other efforts to improve health in the community. For instance, the dashboard acts as an information hub for community-level health initiatives, which could be in conflict with similar individual or organizational efforts to serve that role in the community. The question text was rephrased from an inter-organizational use of technology (as in the original UTAUT instrument); to more closely reflect this community health network context. Despite these concerns, the overwhelming majority of respondents (n=184, or 75.4%) agreed or strongly agreed that the dashboard use *would not* conflict with their individual or organizational efforts to improve community health. In fact, only 6 respondents (or 2.8%) either disagreed or strongly disagreed with this assertion, and another 43 respondents (or 14.3%) remained neutral.

Lastly, Question FC4was identical in both language and theme of the original UTAUT instrument, and this language and theme was vetted by the MHHM focus group. From the feedback by focus group participants, the content and theme of this question was deemed appropriate in the context of a perceived facilitating condition. The leadership attending the MHHM focus group expressed concerns, however, that a

specific person (or group) may not be available to assist with difficulties related to the use of the dashboard. This apprehension may have been echoed by respondents to the survey, where 109 respondents (or 44.7%) indicated a neutral response. Less than a third of total respondents (n= 77, or 31.5%) either agreed or strongly agreed with the statement, and slightly less than one out of five respondents (n=43, or 17.6%) disagreed or strongly disagreed with this assertion.

Network Social Structure

Network Social Structure was the one network-level attribute included in the study, though it is generally understood that a myriad of these attributes exist for any given network (Thornewill, 2011). This attribute was identified and studied in depth in the late '90s, mostly in terms of administrative science (Gulati, 1995; Gulati & Gargiulo, 1999; Uzzi, 1997). In these and other studies, relational ties within organizations and network settings influence a host of individual level factors, including behavioral intent to use technology, as was the case for the UTAUT study (Venkatesh et al., 2003). For the purpose of this research, the survey was designed in a way that could begin to analyze this network social structure in terms of an individual's centrality in the network, or the presence of relationships of an individual to key members in the network.

To assess this network social influence, respondents were asked in a single question to provide the first and last names of up to 5 people, who both knew well personally and who they knew were participants of the Mayor's Healthy Hometown network. The question was constructed in Survey Gizmo with instructions, the question

text, and 5 short answer fields with which to type in names. These short answers were then compiled and cleaned using SPSS, then the list was analyzed for common names. Names that appeared more than once were assigned a value equal to the number of times they were mentioned by respondents. The list of names and associated values was then used to ascribe 'social network scores,' equal to the sum of the values for the names each respondent provided. This process was done using Microsoft Excel and scores were calculated for each respondent individually. The following table outlines the results of this process and analysis, and the names have been de-identified to protect the identity of both the respondents and the individuals they named in the survey:

Mayor's Healthy Hometown Respondent Social Influence Profile Total Unique Names: 236 Maximum Aggregate Score: 12 Maximum Centrality Composite Score per Respondent: 36	
MHHM Network Members	**Number of Mentions by Respondents**
S E	12
L F	11
B B	5
R E	5
C S	4
T W	4
A B (+ 8 others)	3

Table 21: MHHM Social Influence Profile

Additionally, the following table depicts the composite scores for social influence for the top10 respondents found to be most central, in terms of their social network within MHHM, and again, the names have been de-identified to protect the identity of both the respondents and the individuals they named in the survey:

Mayor's Healthy Hometown Respondent Social Influence Profile Total Respondents Indicating Social Influence: 84 of 244 (34.4%) Total Respondents Declining to Indicate Social Influence: 163 of 244 (66.8%)			
Minimum	Maximum	Mean	Std. Deviation
1.0	33.0	8.27	7.42
Maximum Possible Centrality Composite Score: 36			

Names of Most Central Respondents	**Composite Network Centrality Score**
P K	33
T W	31
K M	29
K K	24
T C	24
K H	23
S B C	22
J B	22
J M	20
L W	18

Table 22: MHHM Social Influence Profile 2

The process of collecting information on network social structure and subsequent network centrality scores highlighted several interesting results. First of all, this process, to the best understanding of the researcher, is unique to this study. Since this process had never been produced before in this way, there were many aspects of the research and data collection process that were unknown. For instance, based upon the response rate to this question (n=84, or 34.4%) and in combination with many instances of feedback from respondents, both internally and externally to the survey, this question was likely uncomfortable for many respondents. An explicit example of this, came where one respondent took it upon themselves to distribute a message across the 5 provided fields "I am uncomfortable with this question," even though the question could be skipped and did not require a response. The 84 respondents that did answer the question, however, also

yielded some interesting findings. Through the calculation of social network individual scores, it was determined that respondents could have earned a maximum possible composite score of 36 by identifying the 5 most mentioned MHHM members. No respondent in the pool of 84 scored this maximum total, however the respondent with the highest social network score had a 33 out of the possible maximum of 36. Taking into account only these 84 respondents, the mean social network score was an 8.27, with a standard deviation of 7.42.

All in all, there were 236 unique names provided by these 84 respondents. When these names were cleaned, organized, compiled, and aggregated, it was determined that the MHHM member mentioned most was mentioned 12 total times. The second-most mentioned MHHM member was mentioned 11 total times, and then after that there was a steep drop off to the third-most mentioned MHHM (who tied with the fourth-most mentioned MHHM member) at 5 total times their name was mentioned by respondents.

Since the response rate for this question was relatively low, a binary variable was created for social network scores, SN_YN, which differentiated between all 244 respondents who provided a response to this question (assigned a value of 1) and those respondents who did not provide a response to this question (assigned a value of 0). This yielded the same distribution as described above, whereby 84 total respondents (or 34.4%) did provide a response (at least one name) the social network question, and 163 total respondents (or 66.8%) did not provide a response (no names at all) to the social network question.

A tangential question included in the survey assessed potential participants to the MHHM network. Here, survey respondents were asked to “List 5 people, organizations,

or other networks that may not be currently affiliated with the Mayor's Healthy Hometown network, but you feel should be (for people, first and last names, please)," in the same way they provided responses to the previous question, in 5 short answer fields. These responses were cleaned, organized, compiled and aggregated in the same way as before. These responses are highlighted in the following table, and nothing needed to be de-identified as names of individuals were not the most mentioned potential MHHM network participants:

Mayor's Healthy Hometown Respondent Potential Network Profile Total Respondents Indicating Potential MHHM Network Participants: 93 of 244 (38.1%) Total Respondents Declining to Indicate Social Influence: 151 of 244 (61.9%) Total Potential Network Entries: 290	
Names of Most Mentioned Potential MHHM Network Participants	**Number of Mentions by Respondents**
Jefferson County Public Schools (JCPS)	7
Norton Healthcare	5
Baptist Health Louisville	4
Greater Louisville Inc.	4
YMCA	4

Table 23: MHHM Potential Network Profile

The results of the potential network question were interesting in several ways as well. Slightly more survey respondents answered this question (n=93, or 38.1%) than the previous question on social network, but in general response rates to this question were relatively low. More than three out of five respondents (n=151, or 61.9%) did not provide a response to this question. Due to the low response rate, a binary variable was created, PN_YN, which represented those who did provide a response to the potential network question (assigned a value of 1), and those who did not provide a response to the

potential network question (assigned a value of 0). In all, the 93 respondents to this question provided 290 total potential MHHM network participants, in the form of individual names, organizations, and other networks specific to the Louisville Metro area. When compared to the network map that was generated from the qualitative data collection activities (see figure xxx, on page xxx), it is clear that several of these top-five most mentioned potential MHHM network members are actually already involved and active participants in the MHHM network. For instance, Norton Healthcare is currently represented by more than one individual in the Louisville Metro Board of Health, and the Superintendent of Jefferson County Public Schools is an active member of the MHHM Leadership Team. The remaining three most-mentioned potential MHHM network participants, however, are at least not formally represented within the network map of the MHHM that was generated from the information gathered for this research. That is not to say these entities are not represented somehow in MHHM, but they are certainly contributors to community health in Louisville Metro. The potential network question will be discussed in greater detail in the discussion section, as well as other details of this process in the limitations section.

Behavioral Intent to Participate

Behavioral intent to participate in the MHHM given the identified participation opportunity, use of the Healthy Louisville Community Dashboard, was assessed through a series of questions. These questions were modeled after the original UTAUT instrument, where behavioral intent to use a system was assessed through three questions,

slightly different in language. These questions utilized the words: intend, predict, and plan—all in the context for the "use (of) the system in <n> months." Though each of these words were found to be consistent in predictive use in the original study (Venkatesh et al., 2003), they were maintained in the adapted instrument given that it has been adapted in both language and context, for participation and in network-level settings, respectively. The insights from the qualitative data collection not only indicated the use of the community dashboard was an appropriate participation opportunity for the study, but they also helped to define the parameters of the participation opportunity itself. In essence, the use of the community dashboard could have taken two possible forms:

1. To visit the dashboard for information
2. To contribute content to the dashboard

These participation types, for the same participation opportunity, make sense in terms of an individual's use of the Healthy Louisville Community Dashboard. Qualitative insights from both the interviews with high-level MHHM leadership, and the focus group conducted with individuals in other leadership positions within MHHM, confirmed that this distinction was both necessary and appropriate for the purpose of this study.

To measure responses to the behavioral intent to use the community dashboard, the question set was built inside Survey Gizmo with a series of sliders that measured from 0 to 100, to reflect no intent to use the community dashboard and certain intent to use the dashboard, respectively. Survey respondents were instructed to "leave the slider at 0 if you have no intention to use the dashboard, or move it up to 100 for the strongest

intention to use the dashboard." These created an unforeseen challenge with the interface, whereby not moving the slider at all did not automatically register a zero relative to the specific question and specific intent, though this will be addressed in more detail in the limitations section. Though, due to the explicit instruction for this question set, missing values were transformed to zeroes to reflect no intent to use the dashboard. The results of these questions are outlined in the following table:

Behavioral Intent to Participate				
Variable ID	**Question Text**	**Mean**	**Std. Deviation**	**n, %**
	I intend to use the Healthy Louisville Community Dashboard in the next 3 months.			
BI_INT1	**To visit the dashboard for information**	**56.83**	**34.12**	**244, 100%**
BI_INT2	**To contribute content to the dashboard**	**26.74**	**30.90**	
	I predict I will use the Healthy Louisville Community Dashboard in the next 3 months.			
BI_PRE1	**To visit the dashboard for information**	**57.70**	**35.65**	**244, 100%**
BI_PRE2	**To contribute content to the dashboard**	**25.59**	**31.72**	
	I plan to use the Healthy Louisville Community Dashboard in the next 3 months.			
BI_PLN1	**To visit the dashboard for information**	**58.12**	**37.63**	**244, 100%**
BI_PLN2	**To contribute content to the dashboard**	**25.37**	**31.79**	

Table 24: Behavioral Intent to Participate, Descriptive Statistics

As with the original UTAUT instrument, where in that study the variability between variables using the words intend, predict, and plan; only oscillated between .90 and .92, for each of the variables and across three time interval measurements (Venkatesh et al., 2003), the difference was small between these same variables in this study. Measurements of intent to visit the dashboard for information yielded means of 56.83, 57.70, and 58.12 for: *intend*, *predict*, and *plan* to visit the dashboard for information

respectively. These means also varied at most in standard deviation by 3.51. The results of this question set indicate that regardless of which word was used to describe the respondent's behavioral intention to visit the dashboard for information, on average, respondents indicated that they were approximately 57% to 58% likely to do so. Behavioral intent to use the community dashboard by contributing content to the dashboard, scored much lower than overall intent than to visit the dashboard for information. This was to be expected, as contributing content to the dashboard is more involved and/or intensive of the two ways in with participation through the use of the community dashboard. Measurements of intent to contribute content to the dashboard yielded means of 26.74, 25.59, and 25.37 for: *intend*, *predict*, and *plan* to contribute content to the dashboard, respectively. These means were more tightly distributed, with a maximum difference in standard deviation of 0.89. The results of this question set indicate that regardless of which word was used to describe the respondent's behavioral intention to contribute content to the dashboard, on average, respondents indicated that they were approximately 25% to 26% likely to do so.

Quantitative Analysis of the Results

Quantitative analysis began with standard regression diagnostics in SPSS 20.0. Various tests and checks were performed to look for heteroscedasticity, multicollinearity, non-linearity, normality, and the effect of outliers. Multicollinearity was assessed through an analysis of variance inflation factors (VIF). This was determined to be a non-issue, as the highest VIF was 4.1, for the independent variables SI1 and SI2. For

heteroscedasticity, scatter plots for each of the 25 independent variables were observed and consistent variation and no observable pattern in the residuals across the values of dependent variables was observed. For normality, histograms for each of dependent variable were also observed, supplemented by a Normal P-P plot, and in each case normal distribution was observed. Outlier effect was assessed using the standard 4/degrees of freedom filter, whereby degrees of freedom specifically refers to degrees of freedom for the error sum of squares (Fox, 1991). During this process, Cook's Distance was used to determine which cases was less than 4/188. With this filter, 28 total cases were removed. Regression results of unstandardized beta coefficients (B) and significance for each of the 25 independent variables was compared both with and without this filter present. As a result, the changes in B and significance were not enough to justify the removal of the outlying cases from the final analysis. Lastly, non-linearity was assessed through scatterplot observation. For each of the 25 independent variables, Loess lines and r^2 quadratic lines were applied to assess linearity and identify non-linearity. Independent variables whose R^2 linear values were above .025 for regression to each of the 6 dependent variables were broken into dummy variables. Backwards regressions models were then run for each of the 6 dependent variables to determine if any of the dummy variables were significant in the final models. The following table outlines this test and results:

Non-linear Regression Diagnostic Results		
Variable	Identified as Non-linear	Significant in Backward Regression
BI_INT1	BE1, FC2	BE1, FC2
BI_INT2	SI3, CE4, CE3, NET_EXP	SI3
BI_PRE1	BE1, BE4, FC2, SN_SCORE	BE1, BE4, FC2, SN_SCORE
BI_PRE2	BE1, CE3, CE4,	CE3
BI_PLN1	BE1, CE4, FC2	BE1, FC2
BI_PLN2	CE3, CE4, SI3	SI3

Table 25: Regression Diagnostics: Non-linearity

Upon completion of the regression diagnostics, OLS Backwards Regression with pairwise deletion was performed in SPSS to identify significant variables for the parsimonious models. Pairwise deletion was performed specifically to deal with missing values, as pairwise deletion allows cases with missing values to remain in the analysis, being passed over when a regression coefficient is calculated if the case is missing a value for the corresponding independent variable. These specific variables were entered using OLS Forward regression with pairwise deletion, and any dummy variables that were found to be for significant in the backwards regression were entered as a complete set and maintained in the parsimonious models. The following six tables represent the findings of these regressions, both in full and parsimonious models for each dependent variable:

Behavioral Intent to Participate, Full and Parsimonious Regression Models Dependent Variable (BI_INT1): "Intend to visit the dashboard for information in the next 3 months"				
Independent Variable	**Full Model, r^2= .458**		**Final Model, r^2= .396**	
	B	**Sig.**	**B**	**Sig.**
Expected Benefits				
Usefulness (reference = Neutral)				
Strongly Disagree	37.839	.924	40.095	.954
Disagree	-14.873	.143	-8.276	.264
Agree	13.714	.014**	12.212	.017**
Strongly Agree	4.183	.323	4.872	.282
Increased Effectiveness	8.061	.030**	8.973	.013**
Access to Leaders	3.147	.154		
Increased Social Visibility	-1.940	.717		
Expected Costs				
Understandability	-2.309	.740		
Time and Effort	9.542	.017**	9.564	.005***
Assist Participation	4.476	.116		
Ease of Learning	-3.283	.812		
Social Influence				
Professional Peers	4.760	.144	5.914	.012**
Personal Peers	.697	.435		
Leadership Helpfulness	4.660	.101		
Employer Support	-1.375	.677		
Facilitating Conditions				
IT Resources	-.428	.560		
Knowledge (reference = Neutral)				
Strongly Disagree	-41.169	.014**	-37.240	.013**
Disagree	12.506	.921	11.516	.919
Agree	11.234	.015**	9.780	.019**
Strongly Agree	11.919	.074	13.258	.023**
No Conflicts	.486	.449		
Tech Support	-2.218	.789		
Social Network Provided (reference = No)				
Yes	-1.363	.584		
Social Network Score	-.460	.836		
Potential Network Provided (reference = No)				
Yes	6.924	.163		
MHHM Email Subscriber (reference = No)				
Yes	-5.846	.252		
Age (reference = 45-54 years)				
22-34 years	4.890	.514		
35-44 years	6.368	.272		
55-64 years	6.934	.184		
65+ years	-14.056	.082*		
Gender (reference = Male)				
Female	.306	.949		
Network Experience Level	3.030	.126		
Organizational Size (reference = < 1000 employees)				
1000+ Employees	-1.138	.801		
Organizational Type (reference = For profit)				

Government	-11.209	.096*	-14.402	.019**
Healthcare	5.158	.453	-1.238	.833
Nonprofit	-8.559	.182	-12.664	.031**
Education	1.620	.829	-1.511	.820
None	2.335	.840	-9.444	.340

Table Notes: *=statistically significant to 90% level, α=.10; **=statistically significant to 95% level, α=.05; ***=statistically significant to 99% level, α=.01; B = Reported as Unstandardized; p = Reported as One-tailed except for Potential Network, MHHM Email Subscriber, Age, Gender, Network Experience Level, Organizational Size, and Organizational Type; only two-tailed p-values were used to identify which variables would be retained in the parsimonious model

Table 26: OLS Regression: BI_INT1

Behavioral Intent to Participate, Final Parsimonious Regression Model Dependent Variable (BI_INT2): "Intend to contribute content to the dashboard in the next 3 months"				
Independent Variable	**Full Model, r^2= .307**		**Final Model, r^2= .273**	
	B	**Sig.**	**B**	**Sig.**
Expected Benefits				
Usefulness	5.710	.097		
Increased Effectiveness	.649	.441		
Access to Leaders	-.671	.585		
Increased Social Visibility	1.050	.381		
Expected Costs				
Understandability	-.590	.565		
Time and Effort	-.783	.569		
Assist Participation	6.569	.044**	6.750	.011**
Ease of Learning	-5.560	.927		
Social Influence				
Professional Peers	.156	.486		
Personal Peers	2.800	.264	4.704	.026**
Leadership Helpfulness (reference = Neutral)				
Strongly Disagree	21.753	.806	22.397	.850
Disagree	-14.867	.145	-8.596	.252
Agree	4.405	.187	3.187	.239
Strongly Agree	22.399	.003***	18.708	.004***
Employer **Support**	-.204	.527		
Facilitating Conditions				
IT Resources	-1.893	.735		
Knowledge	1.680	.298		
No Conflicts	-1.327	.638		
Tech Support	2.950	.151		
Social Network Provided (reference = No)				
Yes	-1.518	.591		
Social Network Score	.033	.473		
Potential Network Provided (reference = No)				
Yes	8.817	.080*	8.100	.042**
MHHM Email Subscriber (reference = No)				
Yes	-5.589	.284		
Age (reference = 45-54 years)				
AGE: 22-34 years	.436	.954	.009	.999
AGE: 35-44 years	2.553	.667	2.704	.622

AGE: 55-64 years	1.703	.751	1.365	.785
AGE: 65+ years	-17.307	.036**	-15.635	.038**
Gender (reference = Male)				
Female	-2.822	.563		
Network Experience Level (reference = Moderate)				
Very Low	-27.713	.017**	-26.146	.017**
Low	-18.504	.031**	-17.580	.028**
High	-5.696	.300	-6.599	.187
Very High	-8.532	.114	-8.591	.086*
Organizational Size (reference = < 1000 employees)				
1000+ Employees	2.732	.551		
Organizational Type (reference = For profit)				
Government	-4.719	.557	-5.780	.453
Healthcare	11.405	.117	10.603	.062*
Nonprofit	.284	.818	-.852	.962
Education	2.138	.943	1.065	.752
None	3.443	.616	-1.071	.749

Table Notes: *=statistically significant to 90% level, α=.10; **=statistically significant to 95% level, α=.05; ***=statistically significant to 99% level, α=.01; B = Reported as Unstandardized; p = Reported as One-tailed except for Potential Network, MHHM Email Subscriber, Age, Gender, Network Experience Level, Organizational Size, and Organizational Type; only two-tailed p-values were used to identify which variables would be retained in the parsimonious model

Table 27: OLS Regression: BI_INT2

Behavioral Intent to Participate, Final Parsimonious Regression Model Dependent Variable (BI_PRE1): "Predict I will visit the dashboard for information in the next 3 months"				
Independent Variable	**Full Model, r^2= .488**		**Final Model, r^2= .404**	
	B	**Sig.**	**B**	**Sig.**
Expected Benefits				
Usefulness (reference = Neutral)				
Strongly Disagree	37.830	.917	39.313	.941
Disagree	-7.980	.296	-5.379	.350
Agree	15.382	.010**	12.506	.019**
Strongly Agree	6.956	.235	3.995	.327
Increased Effectiveness	8.476	.029*	10.369	.006***
Access to Leaders	6.336	.024**		
Increased Social Visibility (reference = Neutral)				
Strongly Disagree	20.476	.803		
Disagree	-8.068	.166		
Agree	-11.282	.983		
Strongly Agree	-19.227	.985		
Expected Costs				
Understandability	-3.016	.783		
Time and Effort	10.083	.015**	9.861	.006***
Assist Participation	5.904	.064*		
Ease of Learning	-4.265	.866		
Social Influence				
Professional Peers	2.513	.293	6.356	.012**
Personal Peers	2.480	.286		
Leadership Helpfulness	4.140	.137		

Employer **Support**	-1.910	.731		
Facilitating Conditions				
IT Resources	-2.779	.824		
Knowledge (reference = Neutral)				
Strongly Disagree	-47.116	.008***	-40.581	.011**
Disagree	5.994	.745	7.404	.803
Agree	12.454	.011**	11.759	.010**
Strongly Agree	17.573	.020**	19.561	.003***
No Conflicts	3.959	.162		
Tech Support	-4.217	.928		
Social Network Provided (reference = No)				
Yes	-12.934	.919		
Social Network Score	2.761	.048**	1.583	.042**
Social Network Score^2	-.122	.984		
Potential Network Provided (reference = No)				
Yes	7.693	.135		
MHHM Email Subscriber (reference = No)				
Yes	-3.384	.522		
Age (reference = 45-54 years)				
22-34 years	5.486	.479		
35-44 years	7.065	.258		
55-64 years	5.750	.297		
65+ years	-15.516	.075*		
Gender (reference = Male)				
Female	-2.498	.615		
Network Experience Level	2.657	.199		
Organizational Size (reference = < 1000 employees)				
1000+ Employees	2.476	.596		
Organizational Type (reference = For profit)				
Government	-9.591	.167	-11.356	.079*
Healthcare	8.032	.264	2.980	.633
Nonprofit	-2.843	.666	-9.491	.122
Education	5.119	.508	3.224	.645
None	8.624	.474	-2.541	.806
Table Notes: *=statistically significant to 90% level, α=.10; **=statistically significant to 95% level, α=.05; ***=statistically significant to 99% level, α=.01; B = Reported as Unstandardized; p = Reported as One-tailed except for Potential Network, MHHM Email Subscriber, Age, Gender, Network Experience Level, Organizational Size, and Organizational Type; only two-tailed p-values were used to identify which variables would be retained in the parsimonious model				

Table 28: OLS Regression: BI_PRE1

Behavioral Intent to Participate, Final Parsimonious Regression Model **Dependent Variable (BI_PRE2): "Predict I will contribute content to the dashboard in the next 3 months"**				
Independent Variable	**Full Model, r^2= .286**		**Final Model, r^2= .239**	
	B	**Sig.**	**B**	**Sig.**
Expected Benefits				
Usefulness (reference = Neutral)				
Strongly Disagree	-22.960	.232		
Disagree	-15.674	.160		

Agree	6.011	.193		
Strongly Agree	11.421	.131		
Increased Effectiveness	1.229	.396		
Access to Leaders	.430	.448		
Increased Social Visibility	1.659	.323		
Expected Costs				
Understandability	.899	.406		
Time and Effort	-4.212	.801		
Assist Participation (reference = Neutral)				
Strongly Disagree	13.838	.939	16.441	.991
Disagree	4.340	.761	6.038	.877
Agree	-19.035	.918	-12.079	.853
Ease of Learning (reference = Neutral)				
Strongly Disagree	-6.270	.232		
Disagree	-4.932	.213		
Agree	30.287	.031**		
Strongly Agree	10.352	.368		
Social Influence				
Professional Peers	-4.117	.805		
Personal Peers	7.780	.047**	5.971	.008**
Leadership Helpfulness	6.501	.047**	5.036	.048**
Employer **Support**	-1.296	.693		
Facilitating Conditions				
IT Resources	-.454	.558		
Knowledge	4.470	.093*		
No Conflicts	-2.647	.742		
Tech Support	1.732	.282		
Social Network Provided (reference = No)				
Yes	1.572	.411		
Social Network Score	-.322	.735		
Potential Network Provided (reference = No)				
Yes	10.461	.050**	10.045	.016**
MHHM Email Subscriber (reference = No)				
Yes	-1.490	.788		
Age (reference = 45-54 years)				
22-34 years	-4.843	.546	-4.916	.500
35-44 years	2.915	.643	2.569	.650
55-64 years	-.740	.895	1.518	.766
65+ years	-21.640	.014**	-18.908	.016**
Gender (reference = Male)				
Female	-2.450	.638		
Network Experience Level	.680	.749		
Organizational Size (reference = < 1000 employees)				
1000+ Employees	2.495	.604		
Organizational Type (reference = For profit)				
Government	-7.591	.270	-9.553	.238
Healthcare	10.778	.203	10.299	.087*
Nonprofit	-.524	.750	-.181	.933
Education	1.329	.868	1.045	.848
None	6.182	.400	2.969	.576

Table Notes: *=statistically significant to 90% level, α=.10; **=statistically significant to 95% level, α=.05; ***=statistically significant to 99% level, α=.01; B = Reported as Unstandardized; p = Reported as One-tailed except for Potential Network, MHHM Email Subscriber, Age, Gender, Network Experience Level, Organizational Size, and Organizational Type; only two-tailed p-values were used to identify which variables would be retained in the parsimonious model

Table 29: OLS Regression: BI_PRE2

Behavioral Intent to Participate, Final Parsimonious Regression Model Dependent Variable (BI_PLN1): "Plan to visit the dashboard for information in the next 3 months"				
Independent Variable	**Full Model, r^2= .447**		**Final Model, r^2= .376**	
	B	**Sig.**	**B**	**Sig.**
Expected Benefits				
Usefulness (reference = Neutral)				
Strongly Disagree	67.606	.979	38.645	.925
Disagree	-14.287	.194	-10.493	.239
Agree	13.486	.031**	12.832	.024**
Strongly Agree	5.744	.296	7.053	.229
Increased Effectiveness	8.516	.041**	9.174	.021**
Access to Leaders	5.314	.064*		
Increased Social Visibility	-3.248	.802		
Expected Costs				
Understandability	-2.642	.746		
Time and Effort	9.708	.027**	9.572	.011**
Assist Participation	3.689	.387		
Ease of Learning (reference = Neutral)				
Strongly Disagree	-13.325	.067*		
Disagree	-7.244	.134		
Agree	3.275	.421		
Strongly Agree	-47.048	.921		
Social Influence				
Professional Peers	3.164	.265	7.275	.008***
Personal Peers	3.976	.205		
Leadership Helpfulness	5.862	.079*		
Employer **Support**	-.787	.590		
Facilitating Conditions				
IT Resources	-3.129	.827		
Knowledge (reference = Neutral)				
Strongly Disagree	-37.581	.039**	-36.296	.027**
Disagree	16.450	.948	14.480	.940
Agree	16.055	.004***	12.587	.010**
Strongly Agree	18.735	.024**	13.570	.037*
No Conflicts	3.388	.219		
Tech Support	-4.356	.918		
Social Network Provided (reference = No)				
Yes	-3.477	.682		
Social Network Score	-.765	.920	-.741	.970
Potential Network Provided (reference = No)				
Yes	11.007	.051*	9.620	.043**
MHHM Email Subscriber (reference = No)				

Yes	-4.512	.435		
Age (reference = 45-54 years)				
22-34 years	2.459	.771		
35-44 years	6.370	.334		
55-64 years	6.073	.303		
65+ years	-14.982	.105		
Gender (reference = Male)				
Female	-2.139	.695		
Network Experience Level	1.672	.456		
Organizational Size (reference = < 1000 employees)				
1000+ Employees	-.880	.863		
Organizational Type (reference = For profit)				
Government	-11.183	.140	-13.490	.052*
Healthcare	7.997	.307	1.304	.844
Nonprofit	-6.281	.388	-10.723	.104
Education	.374	.965	-3.219	.667
None	10.666	.423	-6.709	.547
Table Notes: *=statistically significant to 90% level, α=.10; **=statistically significant to 95% level, α=.05; ***=statistically significant to 99% level, α=.01; B = Reported as Unstandardized; p = Reported as One-tailed except for Potential Network, MHHM Email Subscriber, Age, Gender, Network Experience Level, Organizational Size, and Organizational Type; only two-tailed p-values were used to identify which variables would be retained in the parsimonious model				

Table 30: OLS Regression: BI_PLN1

Behavioral Intent to Participate, Final Parsimonious Regression Model Dependent Variable (BI_PLN2): "Plan to contribute content to the dashboard in the next 3 months"				
Independent Variable	**Full Model, r^2= .307**		**Final Model, r^2= .234**	
	B	**Sig.**	**B**	**Sig.**
Expected Benefits				
Usefulness	6.579	.080		
Increased Effectiveness	.907	.423		
Access to Leaders	1.769	.295		
Increased Social Visibility	.529	.441		
Expected Costs				
Understandability	.694	.426		
Time and Effort	-4.874	.849		
Assist Participation (reference = Neutral)				
Strongly Disagree	8.977	.839	18.809	.999
Disagree	2.400	.656	5.224	.876
Agree	-18.362	.911	-9.807	.822
Ease of Learning (reference = Neutral)				
Strongly Disagree	-4.148	.314		
Disagree	-4.024	.254		
Agree	28.635	.038**		
Strongly Agree	11.007	.347		
Social Influence				
Professional Peers	-2.741	.718		
Personal Peers	6.412	.084	7.596	.001***
Leadership Helpfulness (reference = Neutral)				

Strongly Disagree	23.825	.822		
Disagree	-12.834	.209		
Agree	7.441	.082*		
Strongly Agree	16.653	.032**		
Employer **Support**	-.370	.547		
Facilitating Conditions				
IT Resources	-1.185	.645		
Knowledge	4.120	.109		
No Conflicts	.423	.458		
Tech Support	1.538	.301		
Social Network Provided (reference = No)				
Yes	.052	.497		
Social Network Score	-.261	.696		
Potential Network Provided (reference = No)				
Yes	9.344	.078*	9.829	.017**
MHHM Email Subscriber (reference = No)				
Yes	-.051	.993		
Age (reference = 45-54 years)				
22-34 years	-2.472	.755	-2.310	.749
35-44 years	3.043	.628	2.759	.622
55-64 years	-.926	.868	.820	.871
65+ years	-23.610	.007***	-21.599	.006***
Gender (reference = Male)				
Female	-5.411	.290		
Network Experience Level	.868	.678		
Organizational Size (reference = < 1000 employees)				
1000+ Employees	2.285	.630		
Organizational Type (reference = For profit)				
Government	-6.756	.346	-8.151	.202
Healthcare	10.795	.143	10.339	.095*
Nonprofit	.970	.888	-3.555	.561
Education	-2.208	.784	-4.209	.538
None	13.419	.279	3.690	.726

Table Notes: *=statistically significant to 90% level, α=.10; **=statistically significant to 95% level, α=.05; ***=statistically significant to 99% level, α=.01; B = Reported as Unstandardized; p = Reported as One-tailed except for Potential Network, MHHM Email Subscriber, Age, Gender, Network Experience Level, Organizational Size, and Organizational Type; only two-tailed p-values were used to identify which variables would be retained in the parsimonious model

Table 31: OLS Regression: BI_PLN2

In the following section, the results of each of these tables will be described, and organized by each dependent variable. Dependent and independent variables, both significant and non-significant, will be discussed using the variable coding convention. For reference, please refer to the tables above.

The first dependent variable, intent to visit the dashboard as an information source in the next 3 months (BI_INT1), obtained an r^2 of .458 in the full model, and an r^2 of .396 for the parsimonious model. Variables found to be non-significant in this full model, include: access to leaders (p= .154); social visibility (p= .717); understandability (p= .740); assist participation (p= .116); ease of learning (p= .812); professional peers (p= .144), though professional peer support became significant in the parsimonious model; personal peers (p= .435); leadership helpfulness (p= .101); employer support (p= .677); IT resources (p= .560); no conflicts to participation (p= .898); and availability of technical support (p= .449). Several independent variables in the moderator category were also non-significant, which include: Social Network - Yes (p= .584); Social Network Score (p= .836); Potential Network - Yes (p= .163); MHHM Email Subscriber – Yes (p= .252); Gender: Female (p= .949); Network Experience Level (p= .126); and Organizational Size: 1000+ Employees (p= .801).

Related to BI_INT1, however, there were many independent variables that were significant in the full model. These significant variables include: Benefit Expectancy - Usefulness – Agree (p= .014), which was the only dummy variable in this set to be statistically significant; Benefit Expectancy - Increased Effectiveness (p= .030); Cost Expectancy - Time and Effort (p= .017); Knowledge - Strongly Disagree (p= .014); Knowledge – Agree (.015); AGE: 65+ years (p= .082), which was the only dummy

variable in this set to be statistically significant; and Organizational Type: Government (p= .096), which was the only category in this variable of the set to be statistically significant.

In the parsimonious model for BI_INT1, the following variables were maintained: Benefit Expectancy - Usefulness - Strongly Disagree (B= 40.095, p= .954); Benefit Expectancy - Usefulness – Agree (B= 12.212, p= .017); Benefit Expectancy - Increased Effectiveness (B= 8.973, p= .013); Cost Expectancy - Time and Effort (B= 9.564, p= .005); Social Influence - Professional Peers (B= 5.914, p= ..012); Facilitating Conditions - Knowledge - Strongly Disagree (B= -37.240, p= .013); Facilitating Conditions - Knowledge – Agree (B= 9.780, p= .019); Facilitating Conditions - Knowledge - Strongly Agree (B= 13.258, p= .023); Organizational Type: Government (B= -14.402, p= .019); and Organizational Type: Nonprofit (B= -12.664, p= .031).

Interpretation of this final model and these statistically significant variables will be summarized in the following paragraph, respectively. Compared to individuals who were neutral about the community dashboard being useful in their efforts to improve community health, respondents who strongly disagreed with the dashboard's usefulness in efforts to improve community health had, on average, 40 additional points of behavioral intent to visit the dashboard for information, though at a significance level of .092, these results must be regarded as a relatively weak finding. Similarly, respondents who agreed that the community dashboard being useful in their efforts to improve community health had 12 additional points of behavioral intent to visit the dashboard for information for each additional ordinal category, compared to respondents who were neutral—this was a much stronger significance, of .033. For increased effectiveness, we

can expect that for each additional level on the ordinal scale, respondents would have almost 9 additional points of behavioral intent to visit the dashboard for information, as the dashboard enables individuals to be more effective in work efforts to improve community health. Similarly, for time and effort, we can also expect to see an additional 10 points of behavioral intent to visit the dashboard for information for each additional ordinal category, as respondents viewed that the use of the dashboard in this way is a good use of their time and efforts to improve community health. Intent to visit the dashboard for information increased by 6 points for each additional level on the ordinal scale, when respondents felt as though professional peers think they should use the community dashboard . With respect to respondents feeling like they or their respective organizations had the knowledge necessary to use the community dashboard, compared to respondents who were neutral, those who strongly disagreed with the statement were 41 points of behavioral intent to less likely visit the dashboard for information. For those respondents who agreed and strongly agreed to the statement, however, compared to respondents who were neutral, they were an additional 11 and 12 points of behavioral intent greater, respectively, to visit the dashboard for information.. Lastly, compared to individuals in the for profit industry, individuals employed in government and nonprofit were 11 and 9 fewer points of behavioral intent, respectively, to visit the dashboard for information.

The second dependent variable, intent to contribute content to the dashboard in the next 3 months (BI_INT2), obtained an r^2 of .307 in the full model, and an r^2 of .273 in the parsimonious model. Variables found to be non-significant in this full model, include: usefulness (p= .097); increased effectiveness (p= .441); access to leaders (p= .585);

increased social visibility (p= .381); understandability (p= .565); good use of time and efforts (p= .569); ease of learning (p= .927); professional peers (p= .486); personal peers (p= .264), though personal peers was significant in the parsimonious model; employer support (p= .527); IT resources (p= .735); knowledge (p= .298); no conflicts (p= .638); technical support (p= .151); Social Network – Yes (p= .591); Social Network Score (p=.473); MHHM Email Subscriber – Yes (p= .284); Gender: Female (p= .563); Organizational Size: 1000+ Employees (p= .551); and each of the Organizational Type dummy variables; government (p= .557), healthcare (p= .117), nonprofit (p= .818), education (p= .943) and none (p=.616).

Related to BI_INT2, there were also several independent variables in the full model which were found to be significant. These significant variables and their associated p-values include: Cost Expectancy - Assist Participation (p= .044); Social Influence - Leadership Helpfulness - Strongly Agree (p= .003); Potential Network – Yes (p= .080); AGE: 65+ years (p= .036), which was the only dummy variable in this set to be statistically significant; Network Experience Level: Very Low (p= .017) and Network Experience Level: Low (p= .031), which were two of four dummy variables where the other two were non-significant.

In the parsimonious model for BI_INT2, the following variables were maintained: Cost Expectancy - Assist Participation (B= 6.750, p= .011); Social Influence - Personal Peers (B= 4.704, p= .026); Social Influence - Leadership Helpfulness - Strongly Agree (B=18.708, p= .004); Potential Network – Yes (B= 8.100, p= .042); AGE: 65+ years (B= -15.635, p= .038); Network Experience Level: Very Low (B= -26.146, p= .017), Network

Experience Level: Low (B= -17.580, p= .017), and Network Experience Level: Very High (B= -8.591, p= .086); and Organizational Type: Healthcare (B= 10.603, p= .062).

Interpretation of this final model and these statistically significant variables will be summarized in the following paragraph, respectively. For the variable assist participation, respondents generally felt as though contributing content to the dashboard would assist in their participation in the Mayor's Healthy Hometown Movement, and for every additional level of the ordinal scale used, respondents would have almost 7 additional points of behavioral intent to contribute content to the dashboard. Related to personal peers, respondents indicated that when people important to them felt as though they should contribute content to the dashboard, we can expect to see almost an additional 5 points of intention to contribute content to the dashboard for each additional level on the ordinal scale. Respondents who strongly agreed that the leadership of the Mayor's Healthy Hometown would be helpful with the use of the dashboard, had almost 19 more points of intention to contribute content to the dashboard when compared to respondents who remained neutral in their response to the question. Respondents who took the time provide a response to the question: "List 5 people, organizations, or other networks that may not be currently affiliated with the Mayor's Healthy Hometown network, but you feel should be" were observed to have 8 additional points of intent to contribute content to the dashboard than respondents who did not provide a response to this question. Experience working in networks seemed to predict whether a respondent would contribute content to the dashboard, when compared to individuals who had a moderate amount of experience working with networks; individuals who reported very low experience were 26 points of intent to contribute content to the dashboard less.

Similarly, individuals who reported low experience in networks were nearly 18 points of intent to contribute content to the dashboard fewer, also when compared to individuals who reported a moderate amount of experience working in networks. Individuals who reported very high level of network experience were 8.5 points of intent less than individuals with moderate experience, though this significance was much weaker than the previous two experience level categories(p= .086). The oldest respondents aged 65 and over, were almost 16 points of intent to contribute content to the dashboard fewer, when compared to respondents 45-54 years of age. Lastly, when compared to respondents who reported working in the for profit sector, individuals in the healthcare sector scored more than 10 points of additional intent to contribute content to the dashboard.

The third dependent variable "I predict I will visit the dashboard for information in the next 3 months (BI_PRE1)," obtained an r^2 of .488 in the full model, and an r^2 of .404 in the parsimonious model. Variables found to be non-significant in this full model, include: understandability (p= .783); assist participation (p= .064); ease of learning (p= .866); social visibility(p= .803, .166, .983, and .985); professional peers (p= .293), though professional peers was significant in the parsimonious model; personal peers (p= .286); leadership helpfulness (p= .137); employer support (p= .731); IT resources (p= .824); no conflicts (p= .162); and technical support (p= .928). Several independent variables in the moderator category were also non-significant, which include: Social Network - Yes (p= .162); Social Network Score^2 (p= .984); Potential Network - Yes (p= .135); MHHM Email Subscriber - Yes (p= .522); Gender: Female (p= .615); Network Experience Level (p= .199); and Organizational Size: 1000+ Employees (p= .596).

Related to BI_PRE1, however, there were many independent variables that were significant in the full model. These significant variables include: Benefit Expectancy - Usefulness – Agree (p= .010), which was the only dummy variable in this set to be statistically significant; Benefit Expectancy - Increased Effectiveness (p= .029); Benefit Expectancy - Access to Leaders (p= .024); Cost Expectancy - Time and Effort (p= .015); Cost Expectancy - Assist Participation (p= .064); Facilitating Conditions - Knowledge - Strongly Disagree (p= .008); Facilitating Conditions - Knowledge – Agree (p= .011); Facilitating Conditions - Knowledge – Strongly Agree (p= .020); Social Network Score and Social Network Score (p= .048); and AGE: 65+ years (p= .075), which was the only dummy variable in this set to be statistically significant.

In the parsimonious model for BI_PRE1, the following variables were maintained and found to be statistically significant: Benefit Expectancy - Usefulness - Agree (B= 12.506, p= .019); Benefit Expectancy - Increased Effectiveness (B= 10.369, p= .006); Cost Expectancy - Time and Effort (B= 9.861, p= .006); Social Influence - Professional Peers (B= 6.356, p= ..012); Facilitating Conditions - Knowledge - Strongly Disagree (B= -40.581, p= .011); Facilitating Conditions - Knowledge - Agree (B= 11.759, p= .010); Facilitating Conditions - Knowledge - Strongly Agree (B= 19.561, p= .003); Social Network Score (B= 1.583, p= .042); and Organizational Type: Government (B= -11.356, p= .079), the only organization type variable that remained significant.

Interpretation of this final model and these statistically significant variables will be summarized in the following paragraph, respectively. Compared to individuals who were neutral about the community dashboard being useful in their efforts to improve community health, respondents who agreed with dashboard usefulness had 12.5

additional points of behavioral intent to visit the dashboard for information for each additional ordinal category. For increased effectiveness, we can expect that for each additional level on the ordinal scale, respondents would have more than 10 additional points of behavioral intent to visit the dashboard for information, as the dashboard enables individuals to be more effective in work efforts to improve community health. Similarly, for time and effort, we can also expect to see an additional 10 points of behavioral intent to visit the dashboard for information for each additional ordinal category, as respondents viewed that the use of the dashboard in this way is a good use of their time and efforts to improve community health. Intent to visit the dashboard for information increased by 6 points for each additional level on the ordinal scale, when respondents felt as though professional peers think they should use the community dashboard. With respect to respondents feeling like they or their respective organizations had the knowledge necessary to use the community dashboard, compared to respondents who were neutral, those who strongly disagreed with the statement were 41 points of behavioral intent to less likely visit the dashboard for information for each additional ordinal category. Respondents who agreed that they or their respective organizations had the knowledge necessary to use the community dashboard, also compared to respondents who were neutral, were almost 12 points of behavioral intent more likely to use the dashboard. Those respondents who strongly agreed with having the knowledge necessary to use the dashboard were nearly 20 points of behavioral intent greater than respondents who were neutral. Respondents on average had almost 5 points of behavioral intent to use the dashboard for information less for each additional ordinal level, related to respondents' agreement that a specific person (or group) is available to assist with

difficulties related to the use of the dashboard. Respondents' social network score was correlated with BI_PRE1, where they predicted they would use the dashboard as an information source. This continuous variable indicates that for each additional point of social network score, an additional 1.6 points of intent to visit the dashboard for information was observed. Lastly, when compared to respondents who work in the for profit sector, respondents in the government sector were 11 points of behavioral intent to visit the dashboard for information fewer.

The fourth dependent variable, "I predict I will contribute content to the dashboard in the next 3 months (BI_PRE2)," obtained an r^2 of 0.286 in the full model, and an r^2 of 0.239 in the parsimonious model. Variables found to be non-significant in this full model, include: usefulness (p= .232, .160, .193, .131); increased effectiveness (p= .396); access to leaders (p= .448); increased social visibility (p= .323); understandability (p= .406); time and effort (p= .801); assist participation (p= .939 (though the strongly disagree category became significant in the parsimonious model as a two-tailed variable), .761, .918); professional peers (p= .805); employer support (p= .654); IT resources (p= .558); no conflicts (p= .742); tech support (p= .282); Social Network – Yes (p= .411); Social Network Score (p=.735); MHHM Email Subscriber – Yes (p= .788); Gender: Female (p= .638); Network Experience Level (p= .749); and Organizational Size: 1000+ Employees (p= .604).

Related to BI_PRE2, there were also several independent variables in the full model which were found to be significant. These significant variables and their associated p-values include: Cost Expectancy - Ease of Learning - Agree (p= .031); Social Influence - Personal Peers (p= .047); Social Influence - Leadership Helpfulness

(p= .047); Facilitating Conditions - Knowledge (p= .093); Potential Network - Yes (p= .050); and AGE: 65+ years (p= .014), which was the only dummy variable in this set to be statistically significant.

In the parsimonious model for BI_PRE2, the following variables were maintained: Cost Expectancy - Assist Participation - Strongly Disagree (B= 16.441, p= ..991); Social Influence - Personal Peers (B= 5.971, p= .008); Social Influence - Leadership Helpfulness (B= 5.036, p= .048); Potential Network – Yes (B= 10.045, p= .016); AGE: 65+ years (B= -18.908, p= .016); and Organizational Type: Healthcare (B= 10.299, p= .087).

Interpretation of this final model and these statistically significant variables will be summarized in the following paragraph, respectively. For variable assist participation, compared to individuals who were neutral in thinking that contributing information to the dashboard would assist their individual and organizational participation in the Mayor's Healthy Hometown, individuals who strongly disagreed were on average 16 points of behavioral intent to contribute content to the dashboard greater. Related to personal peers, respondents indicated that when people important to them felt as though they should contribute content to the dashboard, we can expect to see almost an additional 6 points of intention to contribute content to the dashboard for each additional level on the ordinal scale. Similarly for leadership helpfulness, though at reduced statistical significance, respondents indicated that for every ordinal level they agreed the leadership of the Mayor's Healthy Hometown would be helpful with the use of the dashboard, we can expect an additional 5 points of behavioral intent to contribute content to the dashboard. Respondents who took the time provide a response to the question: "List 5 people,

organizations, or other networks that may not be currently affiliated with the Mayor's Healthy Hometown network, but you feel should be" were observed to have 10 additional points of intent to contribute content to the dashboard than respondents who did not provide a response to this question. The oldest respondents aged 65 and over, were almost 19 points of intent to contribute content to the dashboard fewer, when compared to respondents 45-54 years of age. Lastly, when compared to respondents who reported working in the for profit sector, individuals in the healthcare sector scored more than 10 points of additional intent to contribute content to the dashboard.

The fifth dependent variable "I plan to visit the dashboard for information in the next 3 months (BI_PLN1)," obtained an r^2 of .447 in the full model, and an r^2 of .376 in the parsimonious model. Variables found to be non-significant in this full model, include: increased social visibility (p= .802); understandability (p= .746); assist participation (p= .194); ease of learning (p= .134, .421, and .921); professional peers (p= .265), though professional peers was significant in the parsimonious model; personal peers (p= .205); leadership helpfulness (p= .079); employer support (p= .590); IT resources (p= .827); no conflicts (p= .219); and tech support (p= .918). Several independent variables in the moderator category were also non-significant, which include: Social Network - Yes (p= .682); Social Network Score (p= .920), though social network score was significant in the parsimonious model using two-tailed testing; MHHM Email Subscriber - Yes (p= .435); Age (p= .771, .334, .303, .105); Gender: Female (p= .695); Network Experience Level (p= .456); Organizational Size: 1000+ Employees (p= .863); and Organizational Type (p= .140 (though government was significant in the parsimonious model), .307, .388, .965, .423).

Related to BI_PLN1, however, there were many independent variables that were significant in the full model. These significant variables include: Benefit Expectancy - Access to Leaders (p= .064); Benefit Expectancy - Usefulness – Agree (p= .031), though this was the dummy variable in this set to be statistically significant; Benefit Expectancy - Increased Effectiveness (p= .041); Cost Expectancy – Ease of Learning – Strongly Disagree (p= .064); Cost Expectancy - Time and Effort (p= .027); Facilitating Conditions - Knowledge - Strongly Disagree (p= .039); Facilitating Conditions - Knowledge – Agree (p= .004); Facilitating Conditions - Knowledge – Strongly Agree (p= .024); and Potential Network – Yes (p=.051).

In the parsimonious model for BI_PLN1, the following variables were maintained and found to be statistically significant: Benefit Expectancy - Usefulness – Agree (B= 12.832, p= .024); Benefit Expectancy - Increased Effectiveness (B= 9.174, p= .021); Cost Expectancy – Assist Participation (B= 9.572, p= .011); Social Influence - Professional Peers (B= 7.275, p= .008); Facilitating Conditions - Knowledge - Strongly Disagree (B= -36.296 p= .027); Facilitating Conditions - Knowledge – Agree (B= 12.587, p= .010); Facilitating Conditions - Knowledge - Strongly Agree (B= 13.570, p= .037); Social Network Score (B= -0.741, p= .970, maintained in the parsimonious model using two-tailed test); Potential Network - Yes (B= 9.620, p= .043);and Organizational. Type: Government (B= -13.490, p= .052), the only organization type variable that remained significant.

Interpretation of this final model and these statistically significant variables will be summarized in the following paragraph, respectively. Compared to individuals who were neutral about the community dashboard being useful in their efforts to improve

community health, respondents who agreed with dashboard usefulness had nearly 13 additional points of behavioral intent more to visit the dashboard for information.. For increased effectiveness, we can expect that for each additional level on the ordinal scale, respondents would have 9 additional points of behavioral intent to visit the dashboard for information, as the dashboard enables individuals to be more effective in work efforts to improve community health. Respondents who indicated that visiting the dashboard for information would assist their or their respective organization's participation in the Mayor's Healthy Hometown, on average had 9.5 more points of behavioral intent for each additional ordinal level of agreement. Intent to visit the dashboard for information increased by over 7 points for each additional level on the ordinal scale, when respondents felt as though professional peers think they should use the community dashboard. With respect to respondents feeling like they or their respective organizations had the knowledge necessary to use the community dashboard, compared to respondents who were neutral, those who strongly disagreed with the statement were 36 points of behavioral intent to less likely visit the dashboard for information for each additional ordinal category. Respondents who agreed that they or their respective organizations had the knowledge necessary to use the community dashboard, also compared to respondents who were neutral, were almost 13 points of behavioral intent more and ultimately more likely to use the dashboard. Those respondents who strongly agreed with having the knowledge necessary to use the dashboard were nearly 14 points of behavioral intent greater than respondents who were neutral. Lastly, when compared to respondents who work in the for profit sector, respondents in the government sector were more than 13 points fewer of behavioral intent to visit the dashboard for information.

The sixth and final dependent variable, "I plan to contribute content to the dashboard in the next 3 months (BI_INT2)," obtained an r^2 of .307 in the full model, and an r^2 of .234 in the parsimonious model. Variables found to be non-significant in this full model, include: increased effectiveness (p= .423); access to leaders (p= .295); increased social visibility (p= .441); understandability (p= .426); time and effort (p= .849); assist participation (p= .839 (though strongly disagree became significant in the parsimonious model using a two-tail test) .656, .911)); professional peers (p= .718); employer support (p= .547); IT resources (p= .645); knowledge (p= .109); no conflicts (p= .458); tech support (p= .301); Social Network – Yes (p= .497); Social Network Score (p=.698); MHHM Email Subscriber – Yes (p= .993); Gender: Female (p= .290); Network Experience Level (p= .678); Organizational Size: 1000+ Employees (p= .630); and Organizational Type (p= .346, .143 (though healthcare was significant in the parsimonious model), .888, .784, .279).

Related to BI_PLN2, there were also several independent variables in the full model which were found to be significant. These significant variables and their associated p-values include: Benefit Expectancy – Usefulness (p= .080); Cost Expectancy - Ease of Learning - Agree (p= .038); Social Influence - Personal Peers (p= .084), Social Influence - Leadership Helpfulness - Agree (p= .082); Social Influence - Leadership Helpfulness - Strongly Agree (p= .032); Potential Network – Yes (p= .078); and AGE: 65+ years (p= .007), which was the only dummy variable in this set to be statistically significant.

In the parsimonious model for BI_PLN2, the following variables were maintained and found to be statistically significant: Cost Expectancy - Assist Participation - Strongly

Disagree (B= 18.809, p= .999), again, due to using a two-tail test; Social Influence - Personal Peers (B= 7.596, p= .001); Potential Network – Yes (B= 9.829, p= .017); AGE: 65+ years (B= -21.599, p= .006); and Organizational Type: Healthcare (B= 10.339, p= .095).

Interpretation of this final model and these statistically significant variables will be summarized in the following paragraph, respectively. For variable assist participation, compared to individuals who were neutral in thinking that contributing information to the dashboard would assist their individual and organizational participation in the Mayor's Healthy Hometown, individuals who strongly disagreed were on average almost 19 points of behavioral intent to contribute content to the dashboard greater. Respondents indicated that when they have people who cared about them personally who felt they should contribute content to the dashboard; this generated over 7 points of behavioral intent to contribute content to the dashboard for every additional ordinal level of agreement. Respondents who took the time provide a response to the question: "List 5 people, organizations, or other networks that may not be currently affiliated with the Mayor's Healthy Hometown network, but you feel should be" were observed to have nearly 10 additional points of intent to contribute content to the dashboard than respondents who did not provide a response to this question. The oldest respondents aged 65 and over, were almost 22 points of intent fewer to contribute content to the dashboard, when compared to respondents 45-54 years of age. Lastly, when compared to respondents who reported working in the for profit sector, individuals in the healthcare sector scored more than 10 points of additional intent to contribute content to the dashboard.

Summary of Quantitative Results

Definite themes emerged from the results of the six separate regression models for the six dependent variables. The differences between using *intend*, *predict*, and *plan*, were minor, which is reflected in not only consistent r^2 values, but in the independent variables that were significant across each of the participation opportunity types; both visiting the dashboard for information, and contributing content to the dashboard. The following table breaks out the significant variables in the parsimonious models that were significant in all three *intend*, *predict*, and *plan;* and organizes them by these types of participation:

Behavioral Intent to Participate, Final Parsimonious Regression Model *Intend, Predict,* and *Plan,* to visit the dashboard for information in the next 3 months"						
Independent Variable	**BI_INT1**		**BI_PRE1**		**BI_PLN1**	
	r^2= .396		**r^2= .404**		**r^2= .376**	
	B	**Sig.**	**B**	**Sig.**	**B**	**Sig**
BE1: Usefulness - Agree	12.212	.017**	12.506	.019**	12.832	.024**
BE2: Benefit Expectancy - Increase Effectiveness	8.973	.013**	10.369	.006***	9.174	.021**
CE2: Cost Expectancy - Time and Effort	9.564	.005**	9.861	.006***	9.572	.011**
SI1: Social Influence - Professional Peers	5.914	.012**	6.356	.012**	7.275	.008***
FC2: Knowledge - Strongly Disagree	-37.240	.013**	-40.581	.011**	-36.296	.027*
FC2: Knowledge - Agree	9.780	.019**	11.759	.010**	12.587	.010**
FC2: Knowledge - Strongly Agree	13.258	.023**	19.561	.003***	13.570	.037*
Org. Type: Government	-14.402	.019**	-11.356	.079*	-13.490	.052*

Table Notes: Reference Groups: BE2 – Neutral, FC2 – Neutral, Org. Type – For profit
*=statistically significant to 90% level, α=.10
**=statistically significant to 95% level, α=.05
***=statistically significant to 99% level, α=.01

p = Reported as One-tailed except for Potential Network, MHHM Email Subscriber, Age, Gender, Network Experience Level, Organizational Size, and Organizational Type; Only two-tailed p-values were used to identify which variables would be retained in the parsimonious model

Table 32: Summary: Behavioral Intent to Visit the Dashboard for Information

Behavioral Intent to Participate, Final Parsimonious Regression Model *Intend, Predict,* and *Plan,* to contribute content to the dashboard in the next 3 months"						
Independent Variable	**BI_INT2**		**BI_PRE2**		**BI_PLN2**	
	r^2= .273		**r^2= .239**		**r^2= .234**	
	B	**Sig.**	**B**	**Sig.**	**B**	**Sig**
CE3: Cost Expectancy - Assist Participation	6.750	.011**				
CE3: Assist Participation - Strongly Disagree			16.441	.991	18.809	.999
SI2: Social Influence - Personal Peers	4.704	.026*	5.971	.008**	7.596	.001***
Potential Network - Yes	8.100	.042**	10.045	.016**	9.829	.017**
AGE: 65+ years	-15.635	.038**	-18.908	.016**	-21.599	.006***
Org. Type: Healthcare	10.603	.062*	10.299	.087*	10.339	.095*

Table Notes: Reference Groups: BE2 – Neutral, FC2 – Neutral, Org. Type – For profit
*=statistically significant to 90% level, α=.10
**=statistically significant to 95% level, α=.05
***=statistically significant to 99% level, α=.01

p = Reported as One-tailed except for Potential Network, MHHM Email Subscriber, Age, Gender, Network Experience Level, Organizational Size, and Organizational Type; Only two-tailed p-values were used to identify which variables would be retained in the parsimonious model

Table 33: Summary: Behavioral Intent to Contribute Content to the Dashboard

From these regression summary tables, it becomes clear that 6 individual independent variables were significant across parsimonious models, related to behavioral intent to visit the community dashboard for information. Similarly, 5 individual independent variables were significant across parsimonious models, related to behavioral intent to contribute content to the community dashboard. These independent variables represented in these tables, along with results related to the research as a whole, will be further elaborated upon in the discussion and conclusion sections.

Actual Participation

The follow-up survey to assess actual participation was deployed on July 13, exactly 3 months to the day of the initial survey deployment. As prescribed in the

methodology, the second survey consisted of a total of 6 questions, including: name and email address (serving as identifiers to match second survey data with initial survey data for each respondent), and nominal yes or no questions about both visiting the dashboard website for information and contributing or attempting to contribute content to the dashboard. Depending on respondent answers to each of these ordinal questions, the survey used logic skipping to present a second question for both yes and no responses. When respondents answered ‘yes’ to either of the actual participation questions, a question regarding how many times in the last 3 months they used the dashboard appeared. This question was ordinal, ranging from 1 to 5 or more times. When respondents answered ‘no’ to either of the actual participation questions, a question appeared asking respondents if they still intended to use the dashboard for the respective dashboard uses. The full follow-up survey, including updated preamble, instructions, and logic skipping questions is presented here:

Network Participation in Public Health - Follow-up Survey

_____

Preamble and Consent
Network Participation in Public Health: The Development of Instruments and Adapted Theory to Predict Stakeholder Participation in a Public Health Network
Date: July 13, 2015
IRB Number: 14.0393

Dear Sir or Madame:

This is an invitation to the follow-up survey to the first part you have already completed, in a research study about understanding stakeholder intentions to participate in the Mayor's Healthy Hometown Movement. There are no known risks for your participation in this research study. The information collected may not benefit you directly. The information learned in this study may be helpful to others. The information you provide will provide insight to better understand networks and the factors that may or may not influence participation. Your completed survey will be stored at Survey Gizmo. The survey will take less than 5 minutes of your time to complete.

Individuals from the Department of Health Management and System Sciences at the University of Louisville School of Public Health and Information Sciences, the Institutional Review Board (IRB), the Human Subjects Protection Program Office (HSPPO), and other regulatory agencies may inspect these records. In all other respects, however, the data will be held in confidence to the extent permitted by law. Should the data be published, your identity will not be disclosed.

Taking part in this study is voluntary. By completing this survey you agree to take part in this research study. You do not have to answer any questions that make you uncomfortable. You may choose not to take part at all. If you decide not to be in this study you may stop taking part at any time.

If you have any questions, concerns, or complaints about the research study, please contact: David Johnson at (502) 468-1752

If you have any questions about your rights as a research subject, you may call the Human Subjects Protection Program Office at (502) 852-5188. You can discuss any questions about your rights as a research subject, in private, with a member of the Institutional Review Board (IRB). You may also call this number if you have other questions about the research, and you cannot reach the research staff, or want to talk to someone else. The IRB is an independent committee made up of people from the University community, staff of the institutions, as well as people from the community not connected with these institutions. The IRB has reviewed this research study.

If you have concerns or complaints about the research or research staff and you do not wish to give your name, you may call 1-877-852-1167. This is a 24 hour hot line answered by people who do not work at the University of Louisville.

Introduction and Instructions

Hello again! Thank you for taking the time to participate in this important research. This follow-up survey seeks to better understand your use of the Healthy Louisville Community Dashboard in the past few months. This survey is very short, at only 6 questions long and it should take you 5 minutes or less to complete. The survey will ask you to provide your name and email. As before, these will remain confidential for the study, but are necessary to match this follow-up survey to your initial responses. Thank you again for your time and input!

Follow-up Survey

The following information will remain strictly confidential. Neither your name or email will not be used in any written reports, nor will they be distributed to third parties. This information is important for the research, but the safety and confidentiality of your information is of the most importance. In two questions, "Dashboard" is a shortened phrase referring to the Healthy Louisville Community Dashboard.

1) What is your Name?
2) What is your email address?
3) In the past 3 months, have you visited the Healthy Louisville Community Dashboard for information (other than as a prompt from the previous survey)?
Yes
No

Logic: Hidden unless: Question "In the past 3 months, have you visited the Healthy Louisville Community Dashboard for information (other than as a prompt from the previous survey)?" #3 is one of the following answers ("No")

4) Though you have not done so in the past few months, do you intend to visit the Healthy Louisville Community Dashboard for information in the future?
Yes
No

Logic: Hidden unless: Question "In the past 3 months, have you visited the Healthy Louisville Community Dashboard for information (other than as a prompt from the previous survey)?" #3 is one of the following answers ("Yes")

5) About how many times have you visited the Dashboard for information (other than as a prompt from the previous survey) in the past few months?
1 time
2 times
3 times
4 times
5 or more times

6) In the past 3 months, have you contributed information to or attempted to contribute information to the Healthy Louisville Community Dashboard?
Yes
No

Logic: Hidden unless: Question "In the past 3 months, have you contributed information to or attempted to contribute information to the Healthy Louisville Community Dashboard?" #6 is one of the following answers ("No")

7) Though you have not done so in the past few months, do you intend to contribute information to the Healthy Louisville Community Dashboard in the future?
Yes
No

Logic: Hidden unless: Question "In the past 3 months, have you contributed information to or attempted to contribute information to the Healthy Louisville Community Dashboard?" #6 is one of the following answers ("Yes")

8) About how many times have you contributed information or attempted to contribute information to the Dashboard in the past few months?
1 time
2 times
3 times
4 times
5 or more times

Thank You!

Thank you for your participation in this research. Your responses have been helpful and are very, very important to us.

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This second survey was very short by design, and took respondents on average 1 minute and 39 seconds to complete. The survey was deployed to all original survey respondents who included an email, which was 237 of the 244 total study respondents. After deploying the second survey email, however, it was discovered that 6 of these provided emails were invalid, dropping the total respondent pool for the follow-up survey to 231 total respondents with valid email addresses, or 94.7% of the initial survey respondents. Data collection for the second survey lasted 10 days before the survey was closed. Multiple 'touches' as prescribed by Dillman were utilized, with subsequent reminder emails 3 and 7 days after the initial emails sent only to those respondents who had not completed the follow-up survey (Dillman, 2011). As responses to the follow-up survey came in, email addresses of those respondents were matched to existing respondent data and removed from a list used for the two reminder emails.

Upon closure of the second survey, 162 total follow-up surveys were collected and matched to respective respondent data. A total of 7 follow-up surveys were disqualified from the analysis, for reasons that include: respondents did not complete an initial survey; respondents completed multiple follow-up surveys; or respondent names and/or email addresses could not be matched to original survey data with complete confidence. In total, the 162 matched follow-up survey responses from the pool of 231 valid email addresses provided, resulted in a response rate of 70.1%. This high response rate makes the generalizability of follow-up respondents to the total study population germane.

The following table represents the descriptive statistics for the respondents who completed the follow-up survey:

Mayor's Healthy Hometown Respondent Profile Follow-up Survey: Measure of Actual Participation n= 162, or 70.1% Response Rate of 231 Valid Respondents (valid, provided email addresses)						
Primary Questions			**Skip Logic Questions**			
	Response	**n, %**	**Number of Visits or Attempts**		**Intend to Use Dashboard?**	
Visited Dashboard for Information in the Last 3 Months	**Yes**	**45, 27.8%**	**Mean**	**Std. D.**		
			2.29	**1.16**		
	No	**117, 72.2%**			**Yes**	**No**
					87, 75%	**29, 25%**
Attempted to Contribute Content to Dashboard in the Last 3 Months	**Yes**	**5, 3.1%**	**Mean**	**Std. D.**		
			1.60	**.894**		
	No	**157, 96.9%**			**Yes**	**No**
					80, 51.6%	**75, 48.4%**

Table 34: Follow-up Survey Results

This follow-up survey measured self-reported actual use of the community dashboard, both in terms of visiting the dashboard for information and contributing, or attempting to contribute, content to the dashboard. As represented in the table, all 162 respondents were presented the primary questions, and depending upon those responses, were presented with a corresponding skip logic question.

Only a little over a quarter of the respondents visited the dashboard for information in the time allowed since the first survey (n= 45, or 27.8%). Among these 45 respondents, the average number of visits to the dashboard was over 2, or specifically 2.29 visits with a standard deviation of 1.16. The other nearly three quarters of respondents did not visit the dashboard for information in the three months allowed since the initial survey (n= 117, or 72.2%). These respondents were asked if they still intended

to visit the dashboard for information in the future, and the results indicated that exactly three fourths of them do intend to visit the dashboard for information in the future (n= 87, or 75%), whereas the remaining fourth of respondents have no intent to visit the dashboard in the future (n= 29, 25%).

The results of respondent attempts to contribute content to the dashboard since the initial survey were less positive. In the three months allotted since the initial survey, only 5 respondents (or 3.1%) reported that they had contributed or attempted to contribute content to the dashboard. Though the sample size for these respondents was exceedingly small, their average number of attempts to contribute content to the dashboard was more than one, or specifically 1.60 attempts with a standard deviation of .894. The vast majority of respondents indicated they had not attempted to contribute content to the dashboard (n= 157, or 96.9%). Among these 157 respondents, the intent to contribute content to the dashboard was split more evenly when compared to visiting the dashboard for information in the future. A total of 80 respondents (or 51.6%) indicated that they intended to contribute content to the dashboard in the future, whereas 75 total respondents (or 48.4%) did not share this intent.

Binary logistic regression was utilized to assess correlations between the primary follow-up survey questions and the dependent variable set for intent to participate. The nominal variables for the follow-up survey which indicated actual participation by respondents of visiting the dashboard for information and attempting to contribute content to the dashboard, and were measured individually against each of the six dependent variables. The results of this series of statistical tests appear in the following table:

Actual Participation: Use of the Healthy Louisville Community Dashboard Binary Logistic Regression Results		
Dependent Variable	Visit Dashboard for Information	Contribute Content to Dashboard
BI_INT1	**1.016*** (p= .004)**	1.082** (p= .030)
BI_INT2	1.012** (p= .014)	**1.054*** (p= .003)**
BI_PRE1	**1.017*** (p= .002)**	1.052* (p= .045)
BI_PRE2	1.010** (p= .037)	**1.056*** (p= .003)**
BI_PLN1	**1.015*** (p= .003)**	1.052 (p= .051)
BI_PLN2	1.010** (p= .036)	**1.038*** (p= .006)**
Table Notes: Results in bold for actual participation type correspond to intent to participate type Results are presented in odds ratios and significance *=statistically significant to 90% level, α=.10 **=statistically significant to 95% level, α=.05 ***=statistically significant to 99% level, α=.01 p = Reported as One-tailed		

Table 35: Binary Logistic Regression Results

The results of this analysis clearly indicate a positive correlation between intent to participate and actual participation, both for visiting the dashboard for information, and attempting to contribute content to the dashboard in the past 3 months. Results for the regression analysis of actual participation, specific to the corresponding participation opportunity type, appear in bold, and those not corresponding to the specific participation opportunity type are shaded. All six of these regression models indicate a positive and statistically significant relationship between intent and actual participation to the 99% level.

Respondents who visited the dashboard for information in the past 3 months and since the original survey, highlighted a positive correlation between each of the dependent variables; BI_INT1, BI_PRE1, and BI_PLN1. These regression models

provided corresponding odds ratios of 1.016, 1.017, and 1.015, respectively. This can be interpreted as the following: for every additional point on a scale of 1 to 100 for behavioral intent to visit the dashboard for information, an additional 1.5 to 1.7% increase in likelihood of use of the dashboard was observed.

Respondents who contributed or attempted to contribute content to the dashboard in the past 3 months and since the original survey, highlighted a positive correlation between each of the dependent variables; BI_INT2, BI_PRE2, and BI_PLN2. These regression models provided corresponding odds ratios of 1.054, 1.056, and 1.038, respectively. This can be interpreted as the following: for every additional point on a scale of 1 to 100 for behavioral intent to contribute content to the dashboard, an additional 3.8 to 5.6% increase in likelihood of use of the dashboard was observed.

CHAPTER 5: DISCUSSION

This research has been an important contribution in many ways. First, it empirically tests of aspects of Network Participation Theory, which had only to date, only been proposed in light of retrospective exploratory analysis. Second, it begins to develop a framework for qualitative data collection that is critical to inform and adapt instruments to this specific network context. Lastly, it expands the Unified Theory of Acceptance and Use of Technology, as an instrument with predictive power and capability to identify factors associated with intent to participate in a public health network.

The discussion section will be organized in terms of research questions and hypotheses, where results relevant to each point will be addressed further.

Research Questions

1. Can the adapted theory and causal model be used to predict stakeholder intent to participate within the Mayor's Healthy Hometown Movement?

Through this research, it certainly appears that the portions and certain causal links of the proposed causal model for this research are validated. As such, the causal model was a derivation of overlapping source theories, which include: Theory of Planned Behavior, Unified Theory of Acceptance and Use of Technology, Whole Network

Theory, and Network Participation Theory. Once the participation opportunity had been identified, which perhaps serendipitously was in fact a technology-based participation opportunity in of itself, instrumentation began to be developed for the assessment of intent to participate in the network. However, through this identification of participation opportunity or opportunities within the network, it became apparent that there were two distinct types and/or uses of the Healthy Louisville Community Dashboard. Essentially, participation in MHHM through the use of the dashboard could be, either: use of the dashboard as an information source related to community health in Louisville Metro, or the use of the dashboard as an interface with which to contribute content related to community health in Louisville Metro. What the research found, was that the causal model did a much better job of explaining the variation observed related to the former use (max r2= .404 among 3 separate models) than the latter (max r2= .273 among 3 separate models).

2. Can an instrument be developed to gather data that is both valid and relevant in explaining the variation observed in this network as it relates to stakeholder intent to participate?

This research question essentially is addressed by two aspects of the results and research process. First, the framework for the qualitative data necessary to develop the instrument was demonstrated through the topic outline and questions for the semi-structured interviews and/or focus groups. The other aspect of which addresses this

research question is the adapted UTAUT instrument itself, which was used for the quantitative portion of the research methodology.

Starting with the qualitative data collection outline and strategy, the results were mixed regarding the development of a quantitative tool that is both valid and relevant in explaining the variation observed in this network as it relates to stakeholder intent to participate. The qualitative outline proved to be effective, where through qualitative data collection procedures, it was necessary to: define the network and network boundary; define participation in the network; obtain information necessary to generate a network map; define and/or identify a participation opportunity or opportunities for the network; and define and better understand perceived benefits and perceived costs for the network. These topic areas did provide sufficient qualitative insights to generate the appropriate context with which to adapt the UTAUT instrument. Remember, in its original form, UTAUT was an interorganizational tool, specific to the use a technology-based system within a single organization (Venkatesh et al., 2003). This context was insufficient to use it directly to test Network Participation Theory, and in the context of a network in which individuals, organizations, and entire networks was working to improve the health of the community, as with the MHHM in Louisville Metro. Some aspects and topics of the qualitative data collection procedures were more fruitful than others. For instance, in terms of defining the network and network boundary, defining participation in the network, and identifying participation opportunities for the network, the two interviews and one focus group, all with MHHM leadership, proved to be very useful. With respect to information necessary to generate the network map, the interview and focus group settings were not the most effective way of gaining this information. Independent

research and secondary data collection ended up being more effective, and even at that, this was very high level mapping, as in, it did not get as granular to specific individuals as may be ideal for future research. Also, it was apparent that the perceived costs and perceived benefits related to the use of the community dashboard which were identified by MHHM leadership, did not necessarily translate to the same perceived costs and benefits of the survey respondents. To clarify, certain themes for questions in the final instrumentation related to perceived benefits and perceived costs were derived from the qualitative data collection. Other themes in questions, however, were ported over from the original instrument. Only 3 themes related to perceived benefit and perceived cost questions were unique to the MHHM context and the qualitative data, these included:

BE3- Use of the Dashboard would increase my/our chances of gaining access to influential community leaders.

BE4 - Use of the Dashboard would increase my/our social visibility in the community.

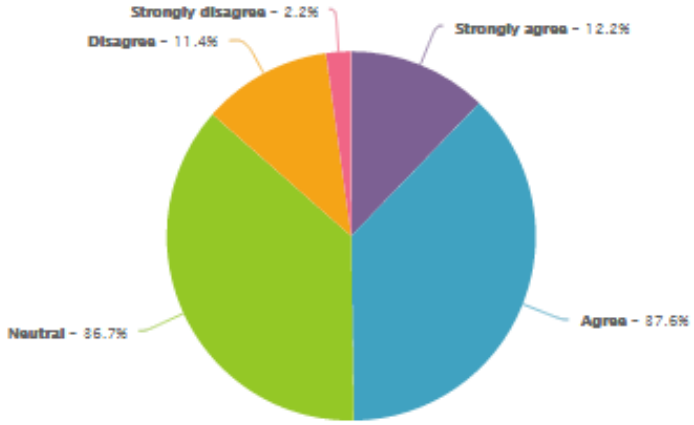
CE3 - Use of the Dashboard would assist my/our participation in the Mayor's Healthy Hometown.

Of these three themes and associated questions, only one appeared to be statistically significant in the parsimonious models for either participation opportunity type. CE3 was found to be significant for user intent to contribute content to the dashboard, where on average; we can expect to see an additional 6.75 points of additional intent to contribute content to the dashboard for every additional level of the ordinal scale

of agreement. The other two perceived benefits, BE3 and BE4, were not found to be significant in the final regression models.

Below are pie charts depicting the responses of these two questions, specifically:

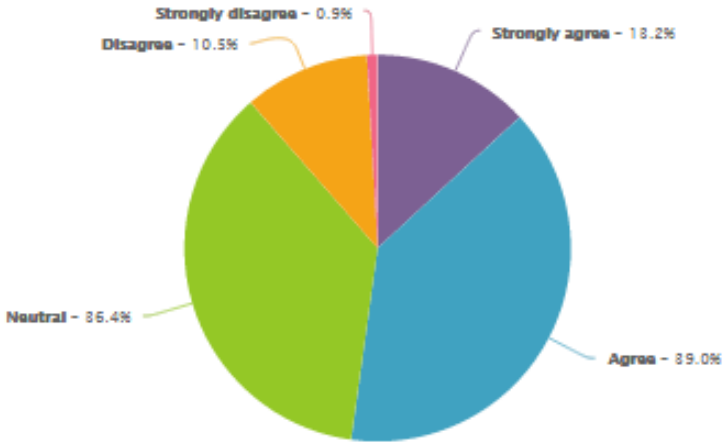
3. Use of the Dashboard would increase my/our chances of gaining access to influential community leaders.



Strongly agree	12.2%		28
Agree	37.6%		86
Neutral	36.7%		84
Disagree	11.4%		26
Strongly disagree	2.2%		5
		Total	229

Figure 9: Question BE3 Descriptive Statistics

4. Use of the Dashboard would increase my/our social visibility in the community.



Strongly agree	13.2%		30
Agree	39.0%		89
Neutral	36.4%		83
Disagree	10.5%		24
Strongly disagree	0.9%		2
		Total	228

Figure 10: Question BE4 Descriptive Statistics

We cannot infer too much from these variables ultimately being non-significant in the parsimonious models. It is clear, however, that there may be some difference in perspectives from MHHM leadership and MHHM participants, as to what exactly are and are not perceived benefits for the use of the Healthy Louisville Community Dashboard.

Moving now to the adapted instrument as a whole, and its ability to gather data that is both valid and relevant in explaining the variation observed in this network as it relates to stakeholder intent to participate. As mentioned in the results related to the previous research question, between the two types of use of the Healthy Louisville Community Dashboard, the adapted UTAUT instrument did much better at explaining he variation observed relative to the use of the dashboard for information (max r^2= .404 among 3 separate models), than the use of the dashboard as an interface with which to contribute content (max r^2= .273 among 3 separate models). Both of these attempts to explain the variation observed related to the use of the community dashboard fell short of the highly validated and regarded UTAUT model (r^2= .70), however the results of the study are promising. They indicate that in this new network context, and context of participation as opposed to use, the proposed causal model and those aspects of NPT from which they were derived, did in fact explain some if not much of the variation observed.

3. Assuming questions one and two are answered through the research, what factors are found to correlate with actual participation in the network?

Bivariate correlation analysis of measures of actual participation indicated that none of the moderators; age, gender, network experience, organizational size, or organizational type, seemed to be significant predictors of actual participation in the network. However, binary logistic regression analysis of actual participation measures and the six dependent variables related to intent to participate *were highly correlated*. This finding seems to support the original causal model, and Network Participation Theory, whereby a causal link exists between behavioral intent to participate and actual behavior—in this case, participation in the identified participation opportunity.

Correlations for behavioral intent to visit the dashboard for information were found to be statistically significant to the 99% level with each of the three dependent variable models: BI_INT1 (p= .004), BI_PRE1 (p= .002), BI_PLN1 (p= .003). Correlations for behavioral intent to contribute content to the dashboard were found to be statistically significant to the 99% level for two of the three dependent variable models, and statistically significant to the 95% level for the remaining dependent variable model: BI_INT2 (p= .003), BI_PRE2 (p= .003), BI_PLN2 (p= .006).

Research Hypotheses and Supportive Results

The following are the hypotheses that this research hoped to address through the research process. For the purpose of discussion, these will be organized in terms of specific hypotheses, the results which were related, and any deficiencies in the research to address specific hypotheses. For each one, assume with all else being equal:

1. As perceived social influence increases, intent to participate will increase.

This hypothesis was not refuted by the study. For each of the participation opportunity types, using the dashboard for information, or contributing content to the dashboard, one independent variable related to social influence remained significant in the parsimonious models. With respect to visiting the dashboard for information, SI1 - People who care about me professionally think that I should use the Healthy Louisville Community Dashboard, was found to be significant. For every additional ordinal level of agreement with that statement, an additional 5.9 to 7.3 points of intent to participate was observed. With respect to contributing content to the dashboard, SI2- People who are important to me think that I should use the Dashboard, was found to be significant. For every additional level of agreement with that statement, an additional 4.7 to 7.6 points of intent to participate was observed.

These findings were interesting, not only because they seem to support some fundamental causal relationships in the adapted model and NPT, but also because they show that for the two participation types, two very different types of social influence are significant and influential. In essence, if one were to want to increase participation and the use of the community dashboard for information, leveraging professional peers seems to be the best way to do so. Conversely, if one were to want to increase participation and the use of the use of the dashboard by contributing content to it, leveraging personal peers seems to be the best way to do so

2. As perceived benefits increase, intent to participate will increase.

This hypothesis was not refuted for the study related to intent to use the dashboard for information, however in the context of contributing content to the dashboard; it is undetermined since the study did not find a significant correlation between intent to contribute content to the dashboard and any of the four benefit expectancy independent variables. Two independent variables, BE1 - I would find use of the Healthy Louisville Community Dashboard useful in my/our work to improve health in the community, and BE2 - Use of the Dashboard would enable me to be more effective in my work to improve health in the community; were both found to be significant in association with participation by visiting the dashboard for information. Relative to BE1, for every additional ordinal level by respondents, 12.2 to 12.8 additional points of intent to participate was observed. Relative to BE2, for every additional ordinal level by respondents, 9.0 to 10.4 additional points of intent to participate was observed.

These results indicate that benefit expectancy, in terms of both the usefulness of the dashboard in efforts to increase the health of the community, and the use of the dashboard as increasing respondents' effectiveness in work to improve health of the community, are both important factors. If one were to increase participation with respect to more individuals using the dashboard as an information source, highlighting both the utility of the dashboard and its ability to potentially increase effectiveness in promoting community health, would each generate greater intent to use the dashboard in this way.

3. As perceived costs decrease, intent to participate will increase.

This hypothesis was not refuted for the study related to intent to use the dashboard for information, however in the context of contributing content to the dashboard; the results are mixed, since the study found significant correlation between intent to contribute content to the dashboard and one cost expectancy independent variables, where both a direct and inverse relationship between cost and intent was observed. One independent variable, CE2 - Use of the Dashboard would be a good use of my time and efforts was found to be significant in association with participation by visiting the dashboard for information. Relative to CE2, for each additional ordinal level by respondents, an additional 9.6 to 9.9 points of intent to participate was observed. In essence, the more respondents felt as though the use of the dashboard would not create a time or opportunity cost, the more likely they were to use it. This result highlights one way in which MHHM leadership could promote greater intent to use the community dashboard, whereby ensuring that individuals feel that it is a good use of their time and efforts.

As stated before, the correlation between contributing content to the dashboard and one cost expectancy independent variable was mixed. CE3 - Use of the Dashboard would assist my/our participation in the Mayor's Healthy Hometown, yielded conflicting results. In one of the three, final parsimonious models, BI_INT2, non-linearity for CE3 was not an issue and dummy variables were subsequently not created. However for the other two final parsimonious models, BI_PRE2 and BI_PLN2, non-linearity was found to be an issue through regression diagnostics and dummy variables were created, which ultimately increased the r^2 for both models. Essentially, related to CE3, the first model indicates that

for every additional ordinal category by respondents, and additional 6.8 points of intent to participate were observed. This first model fails to refute the hypothesis. The final two models, however, indicate that when compared to respondents who were neutral for question CE3, respondents who strongly disagreed were observed to have 16.4 to 18.8 additional points of intent to contribute content to the dashboard. These second two models do refute the hypothesis, as perceived costs are not inversely related to intent to participate. There are many possible contributing factors to these conflicting results, including; respondents' misunderstanding the question, intentional skewing of responses, or others. As such, the hypothesis is clearly not refuted for intent to use the dashboard for information, but more information and/or research is needed in relation to perceived cost expectancy and contributing content to the dashboard.

4. As facilitating conditions increase, intent to participate will increase.

This hypothesis was not refuted for the study related to intent to use the dashboard for information, however in the context of contributing content to the dashboard; it is undetermined since the study did not find a significant correlation between intent to contribute content to the dashboard and any of the four facilitating condition independent variables. One independent variable, FC2 - I/we have the knowledge necessary to use the Dashboard, was found to be highly predictive of intent to visit the dashboard for information. Due to non-linearity issues identified in regression diagnostics, dummy variables for FC2 were created for each of the three models, BI_INT1, BI_PRE1, and BI_PLN1. For each parsimonious model, three out of four dummy variables (not

including neutral, used as a reference group) were significant. Not only were they significant, but the direction of correlation coincided with the hypothetical assertion that as perceived facilitating conditions increased, so would intent to participate. Related to FC2, respondents who strongly disagreed that they had the knowledge necessary to use the dashboard, were 36.3 to 40.6 points of behavioral intent fewer compared to respondents who were neutral. Making the same comparison to the neutral reference group, respondents who agreed were 9.8 to 12.6 points of behavioral intent higher, and those respondents who strongly agreed with FC2 were 13.3 to 19.6 points of behavioral intent higher. This is an important finding, as the knowledge necessary to use the dashboard has a strong effect to influence intent to use the dashboard, in opposite directions for people do not have the knowledge and do have the knowledge to use the dashboard, respectively.

Regarding contributing content to the dashboard, more information and/or research is needed to identify correlations between behavioral intent and perceived facilitating conditions. As such, relative to the hypothesis and this second participation opportunity type, it remains undetermined and inconclusive that they have a relationship.

5. As centrality in the network increases, perceived social influence will increase.

This hypothesis remains undetermined, as the study did not uncover a statistically significant relationship between the measure of centrality, the social network score, and intent to either visit the dashboard for information or contribute content to the dashboard. The results of this study, and in particular the assessment of this specific hypothesis, were

undoubtedly affected by several factors. First, the relatively small sample size did not help the quantitative analysis. The total sample size for the study included 244 individuals, however only 87 respondents (or 35.7%) provided a response to this question. With such a small sample, it was difficult to generate the overlap in social circles necessary to create the instances where specific MHHM member names were mentioned multiple times. The highest mentioned name was only mentioned 12 times, and there were 236 unique names mentioned in total. This methodology may have merit to generate a correlation between network centrality measured this way, but it would require a larger sample. As such, the study results could not refute nor support the hypothesis.

One interesting result of the study, tangentially related to the concept of network centrality, was the potential network question, where respondents were asked to list 5 people, organizations, or other networks that may not be currently affiliated with the Mayor's Healthy Hometown network, but you feel should be. This independent variable, or rather the binary variable created to this question—where respondents who answered this question were coded 1 (n= 93, or 38.1%) and respondents who did not answer the question were coded 0 (n= 151, or 61.9%)—was found to have a statistically significant correlation to each of the three parsimonious models for contributing content to the dashboard. Essentially, respondents who did answer the potential network question were on average, observed to have 8.1 to 10.0 more points of behavioral intent to contribute content to the dashboard. This finding is interesting and could be interpreted in a variety of ways. Interpreting it in terms of centrality, it could indicate that respondents who are more familiar with the MHHM network—its members and potentially individuals,

organizations or other networks not currently involved—possessed a quality that made them more likely to indicate an intention to contribute content to the dashboard. This information may be useful to MHHM leadership in terms of facilitating greater use and contribution of content to the dashboard, to identify individuals in the network and/or community that have a sense of the network as a whole, potentially from a systems perspective.

6. As behavioral intent to participate increases, actual participation will increase.

This hypothesis was not refuted by the study. For each of the participation opportunity types, using the dashboard for information, or contributing content to the dashboard, a positive and statistically significant relationship was observed between behavioral intent to use the dashboard and actual use of the dashboard. With respect to visiting the dashboard for information, binary logistic regression analysis of behavioral intent and actual participation produced odds ratios between 1.015 and 1.017, indicating that for every additional point on a scale of 1 to 100 of intent, it produced on average an increase of 1.6% likelihood of actual usage. Similarly, with respect to contributing or attempting to contribute content to the dashboard, binary logistic regression analysis of behavioral intent and actual participation produced odds ratios between 1.038 and 1.056, indicating that for every additional point on a scale of 1 to 100 of intent, it produced on average an increase of 4.9% likelihood of actual usage.

CHAPTER 6: LIMITATIONS AND IMPLICATIONS FOR FUTURE RESEARCH

There were several limitations to this study, both in terms of qualitative limitations and quantitative limitations. For this reason, the limitations of this study will be organized and discussed by these distinctions, and the implications and opportunities for future research will be discussed in the final section.

Qualitative Limitations

Perhaps the most significant limitation related to the qualitative data collection and qualitative data results is the leadership transition that occurred during the process of this research. The top two leadership positions in MHHM, the Chairs of the Leadership Team and Community Coalition, were both vacated by individuals who left Louisville Metro Department of Public Health and Wellness, the lead agency in MHHM, in early 2015. The two interviews collected for this research were with both of these individuals, and due to their departure, the purpose of the focus group was shifted to also include a validation of this qualitative data, as opposed to collecting qualitative data from the same methodology from the focus group in addition to the interviews. Fortunately, the majority of the insights generated from the interviews were supported by MHHM leadership who attended the focus group. There were insights from qualitative data collection, however,

such as the information regarding network-specific perceived costs and perceived benefits, which were not found to be important and/or significant in the quantitative analysis. This highlights a potential disconnect between the leadership and membership of this network, and it may have been more appropriate to identify what those perceived benefits and perceived costs actually were from a random sample of the membership.

Next, there was a lot of movement and reorganization occurring with this network at the time of this study. MHHM leadership frequently referred to the current rebranding, or repurposing, or refocusing efforts that were currently underway, or in the process of those changes being deployed. This and the previous limitation may have contributed to the difference in model fit between this study and the original UTAUT study, however given the new purpose and new context for the use of the UTAUT instrument in this study, such a contribution in difference is only speculative.

There was some difficulty in acquiring secondary data documents related to the MHHM. Several requests for meeting minutes, reports, strategic planning, and other topics were requested on multiple occasions to help support and/or validate some of the qualitative insights that had been generated. While some of these requests were granted, and over 50 individual documents of secondary data collected, there were key documents, such as a presentation that one of the MHHM leadership interviewees had referred to in the interview, was never obtained. Similarly, though the research in this case was able to obtain some documents, they were very unorganized, and it was unclear as to whether a single individual was responsible for storing and organizing such documents related to MHHM.

Lastly, related to all of the above limitations, there was more than likely additional qualitative data collection that could have occurred to help inform the quantitative instrument. Due to time and real-world constraints of working with a dynamic government entity in the process of a significant leadership transition, the study was only able to achieve so much qualitative data collection.

Quantitative Limitations

The primary limitation for the quantitative data collection and results portion of the study is probably the nature of the sample. The respondents for this study were not random, and instead they were voluntary. The invitations to participate in the study were sent to over 5000 individuals by email and to over 1500 via Facebook, and after duplicate and partial responses were removed, only 244 completed surveys remained.

The invitation to the survey was sent to not only the MHHM listserve, as intended, but also to the various MHHM related committees. Only the information related to the MHHM listserve was provided to the researcher, which included 4428 of the 5021 (or 88%) of the respondents with which the survey invitation was sent. No additional information about the other 12% of the potential respondents was collected.

Representativeness of the sample is another quantitative limitation. Again, representativeness suffers due to the voluntary nature of the sample, but in addition several unknowns regarding information on MHHM email subscribers. There are only three variable categories associated with each subscriber, which include: email address, the date in which the subscription was created, and the origin, or rather how the

subscriber contact information arrived onto the listserve (direct, upload, network, or other.) No additional information is collected about individuals, such as pertinent demographic data, interests, or otherwise. Due to the lack of robustness in information in the listserve itself, certain comparisons with the listserve population and the Facebook page subscribers were made. This creates a limitation by where we are comparing two populations, where there is known overlap, but to what extent the populations overlap—and in essence how representative the Facebook page population is to the listserve population—is unknown.

As discussed in the previous chapter, the small sample size likely contributed to the measure of centrality, social network score, not being of more value to the study. The total number of respondents who participated with this question was only a fraction of the total respondent pool (n=87, or 35.7%), and as such failed to produce enough overlap in social circles to be statistically significant.

There was a technical limitation with regard to the Survey Gizmo interface and the questions related to the dependent variable set, 'behavioral intent to participate.' This limitation pertains to the question formatting, which incorporated the use of 'sliders' to move along a scale of 0 to 100. The question instructions clearly stated "For the following three questions, leave the slider at 0 if you have no intention to use the dashboard, or move it up to 100 the strongest intention to use the dashboard," however, by not moving the slider, respondents did not record a response to the question. These missing data fields were converted to a 0, as per the instructions. Had there not been this technical issue, the behavioral intent to participate scores, both in terms of using the dashboard for information and contributing content to the dashboard, would have had

their scores affected. Here is a table representing the descriptive statistics for each dependent variable, without the missing data corrected:

Behavioral Intent to Participate				
Variable ID	**Question Text**	**Mean**	**Std. Deviation**	**n, %**
	I intend to use the Healthy Louisville Community Dashboard in the next 3 months.			
BI_INT1	**To visit the dashboard for information**	**62.46**	**30.37**	**222, 91.0%**
BI_INT2	**To contribute content to the dashboard**	**38.60**	**30.24**	**169, 69.3%**
	I predict I will use the Healthy Louisville Community Dashboard in the next 3 months.			
BI_PRE1	**To visit the dashboard for information**	**64.29**	**31.41**	**219, 89.8%**
BI_PRE2	**To contribute content to the dashboard**	**39.03**	**31.46**	**160, 65.6%**
	I plan to use the Healthy Louisville Community Dashboard in the next 3 months.			
BI_PLN1	**To visit the dashboard for information**	**66.89**	**32.19**	**212, 86.9%**
BI_PLN2	**To contribute content to the dashboard**	**40.46**	**31.53**	**153, 62.7%**

Table 36: Behavioral Intent to Participate Without Missing Data Adjustment

Ultimately, however, the intent to participate scores with the missing data recoded to zeroes was used for the final analysis. Justification for this rested with the clearly defined instructions, and a limitation and issue with the technology and interface.

Lastly, as discussed in the results section, the unexpected McAfee antivirus redirect, from following the URL from the GovDelivery email system, likely affected response rates.

With respect to the follow-up survey, a limitation exists with how actual participation was measured. Essentially, the measure of actual participation is self-reported, which may or may not have affected the results. For future studies, particularly for technology-based participation opportunities, there are better ways to measure actual

participation. For instance, in the case of this study, website-based tracking analytics could have been utilized to assess exactly which respondents visited the dashboard for information. The same technique could have been employed for attempting to contribute content to the dashboard, as those sections of the website are on specific pages. For successful contributions to the dashboard, the user and subsequent respondent information would likely already be associated with their contribution.

Implications for Future Research

This research produced a multitude of implications for future research. The first and perhaps the most exciting implication, is the partial validation for several constructs within Network Participation Theory. Also, it appears as though UTAUT can be adapted to predict stakeholder intent to participate for an identified participation opportunity. Lastly, the proposed qualitative framework for adapting the UTAUT instrument to a specific network context, appears to have generated an instrument that at least partially explains the variation observed in the responses.

Network Participation Theory is a robust theory which incorporates elements of several theories in to one, and addresses the idea of stakeholder participation as being the result of a system of network, organizational, and individual level factors. This study only addressed a portion of this theory, through a prospective and empirical framework. Again, this study seems to preliminarily validate components of the theory, such as a causal link between perceived benefits, perceived costs, perceived social influence, and perceived social influence—all related to intent to participate. Still other individual and

organizational-level moderators were found to be correlated with intent to participate. Given these observations, other aspects of Network Participation Theory, such as the myriad of network-level attributes, such as: network structure, network governance, and network resources (among others)—which may impact individual perceptions about costs, benefits, social influence, and facilitating conditions—should be researched. In addition to the network-level attributes, participation-based outcomes identified in Network Participation Theory should all be researched, including: individual, organizational, and network participation, as well as changes to the network environment.

Still other implications for future research include validating and replicating the findings of this study. For instance, UTAUT can and should be tested with non-technologically based participation opportunities. These would need to be network and context specific, but this study still leaves the use of UTAUT as a predictive instrument to predict stakeholder intent to participate in a network setting undetermined, with respect to non-technologically based participation.

CHAPTER 7: CONCLUSION

This study is the first to adapt UTAUT as a means of predicting intent to participate in a network, and in this specific context, a public health network in Louisville Metro called the Mayor's Healthy Hometown Movement. Though the model fit was not as predictive as the original use of UTAUT for the use of technology in an organizational setting, this study was able to generate a model fit with a maximum r^2 of .404—a respectable first attempt at such an adaptation. The adaptation an derivation from the original UTAUT instrument warrants nomenclature that reflects the use in a network setting to assess participation—and this new instrument, developed through adapted theory, is the Network Participation Instrument v1 (NPIv1) (Johnson, 2015).

Why is this research important? "Despite the growing popularity of community health partnerships, evidence from demonstration projects and case-study evaluations of partnerships indicate that they frequently fail to achieve measureable results" (Hasnain-Wynia et al., 2001). This quote from 2001 identifies a concept that holds true in 2015—that though community health collaborations and networks are popular (e.g. the Affordable Care Act and the creation of the National Prevention Council), they often fall short on measurable goals. In Louisville Metro, the adoption of the Healthy Louisville 2020 strategic plan outlines a number of community-level health-related goals, and the use of the community dashboard is a means with which to measure those goals (Metro, 2014). Adapted theory and developed instruments, such as the ones applied and which generated the Network Participation Instrument v1 in this study, seek to bolster the

measurement of these outcomes, as well as general participation in the network. This study identified several independent variables that were significant to intent to participate, both in terms of using the community dashboard for information, as well as contributing content to the dashboard. This study also identified a positive and statistically significant relationship between behavioral intent to participate and actual participation behavior, an important finding to help validate a critical link and relationship in the adapted causal model and Network Participation Theory.

Both Network Participation Theory and the Unified Theory of Acceptance and Use of Technology have, to date, had little application in public health practice and research. This study has hopefully set the stage for more application of these theories, as well as the qualitative methodological approach and the subsequent adapted instruments developed in this research, because they appear to have predictive qualities related to stakeholder intent to participate in the network, which has been shown to correlate with actual participation. Future use of the Network Participation Instrument v1 can help to identify factors that are significantly correlated with intent to participate and subsequent actual participation behavior. The identification of these factors would allow network leadership the ability to save time, energy, and resources by focusing on these factors, specifically, to increase participation with respect to an identified participation opportunity.

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Appendices

Appendix 1: Causal Model and Study Design

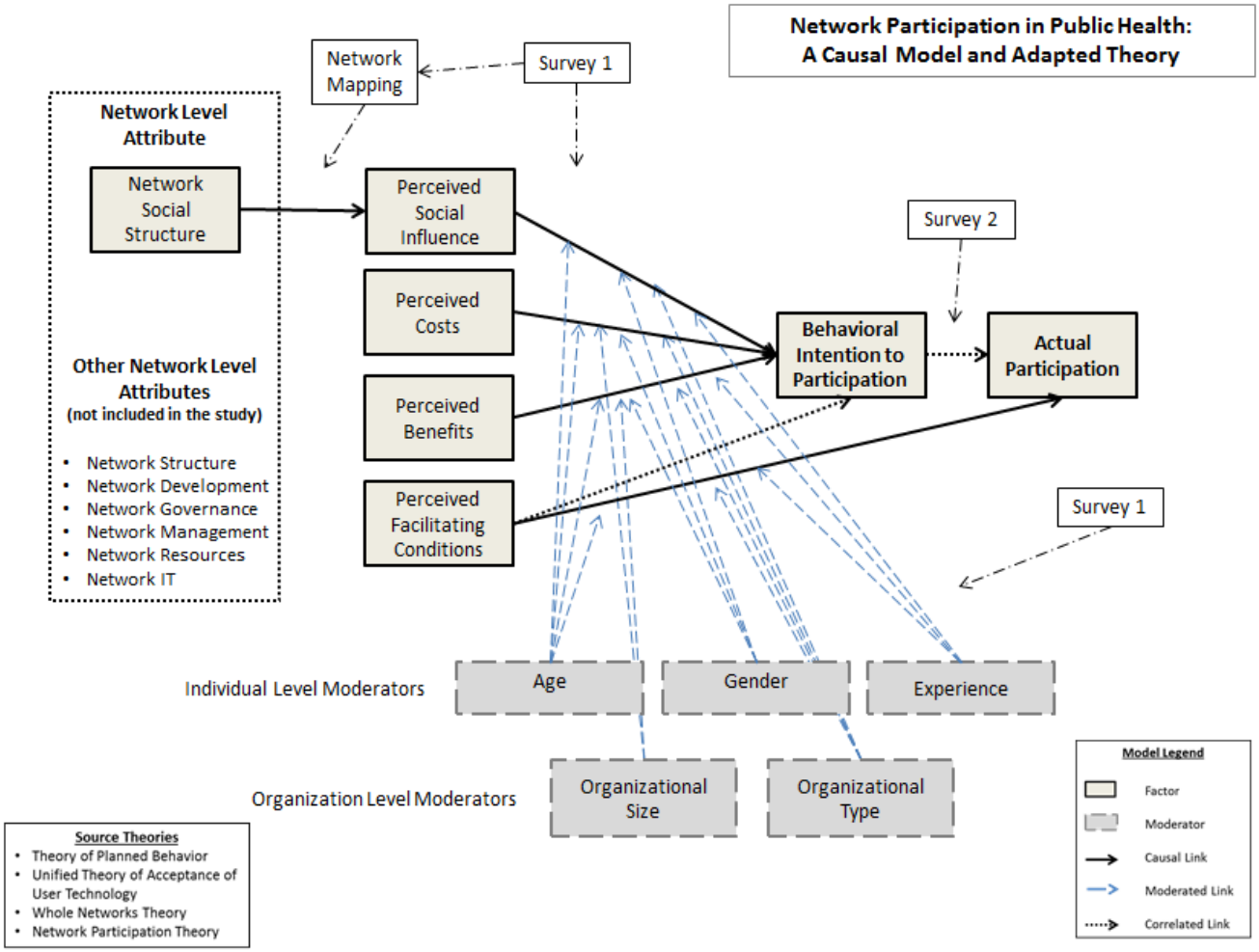


Figure 1: Proposed Causal Model

Appendix 2: Quantitative and Qualitative Instruments, First Draft

Network Participation in Public Health: Survey 1

Identifying Question: Name

Benefits

I would find participation with the network useful in my job.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Participating with the network enables me to accomplish tasks more quickly.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Participating with the network increases my productivity.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

If I participate within the network, I will increase my chances of getting a raise.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Costs

My participation with the network would be clear and understandable.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

It would be easy for me to become skillful at participating within the network.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

I would find the network easy to participate in.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Learning to participate in the network is easy for me.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Social Influence

People who influence my behavior think that I should participate within the network.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

People who are important to me think that I should participate within the network.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

The leadership of this network has been helpful in the participation within the network.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

In general, my employer has supported participation within the network.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Facilitating Conditions

I have the resources necessary to participate within the network.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

I have the knowledge necessary to participate within the network.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

The network is not compatible with other networks I participate within.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

A specific person (or group) is available for assistance with participation difficulties.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Behavioral Intention to Participate with the Network

I intend to participate within the network in the next 5 months.
Yes
No
I predict I would participate within the network in the next 5 months.
Yes
No
I plan to participate in the network in the next 5 months.
Yes
No

Network Social Structure

List 5 people you know best who you know participate within the network:
_____
_____
_____
_____
_____

List 5 people, organizations, or other networks that may not be currently affiliated with the network, but you feel should be:
_____
_____
_____
_____
_____

Individual Moderators

Please indicate which age range you fall within:
21 and under
22 to 34
35 to 44
45 to 54
55 to 64
65 and over
Decline

Please indicate your gender identity:
Male
Female
Other
Decline

Please indicate your level of experience participating within networks:
Very Low Experience
Low Experience
Moderate Experience
High Experience
Very High Experience

Organizational Moderators

Please indicate the size of your employer:
Self-employed
2-20 employees
21-100 employees
101-300 employees
301+ employees

Please indicate the type of your employer:
Nonprofit
Government
Academic
Healthcare
Other

Network Participation in Public Health: Follow-up Survey

Identifying Question: Name

Have you participated in the network in the past 5 months?
Yes
No

If you have *not* participated in the network in the past 5 months, please indicate what most influenced your decision:
The benefits of participating were not great
The costs of participating were too high
The people influential to me did not encourage my participation
I did not have the resources necessary to participate

If you *have* participated in the network in the past 5 months, please indicate what most influenced your decision:
The benefits of participating were high
The costs of participating were low
The people influential to me encouraged my participation
I had the resources necessary to participate

If you *have* participated in the network in the past 5 months, please indicate the level at which you have participated:
Very Low Participation
Low Participation
Moderate Participation
High Participation
Very High Participation

Semi-structured Interview and Focus Group Questions: Qualitative Data Collection

Goals and related questions for interviews and/or focus groups:

Define Network and Network Boundary
Who would you describe consider part of the Mayor's Healthy Hometown Movement? Active versus passive participants?
How would you draw the boundary for this network of study? For instance, who should be included in the total population from which a random sample will be drawn?
Would there be any significant exclusion to the total population of MHHM? Louisville Metro is inclusive of all of Jefferson County, but does MHHM's reach extend beyond those geographical boundaries?

Define Participation in and for the Network
How would you define "participation" within the Mayor's Healthy Hometown?
If this participation can and/or should be measured on a scale, what would be the most appropriate intervals for that measurement?

Obtain Information necessary to generate a Network Map
Who are the most influential individuals, organizations, and networks who are currently participating in the Mayor's Healthy Hometown Movement?
Are there individuals, organizations, and networks in the community or otherwise who are not currently participating in MHHM, but you feel would add value with their participation?

Define Participation Opportunity or Opportunities for the Network
What opportunity or opportunities for participation exist within the Mayor's Healthy Hometown?
If there is more than one, is there a prioritization to the list of opportunities? Which, if any, are of the most interest to the leadership of MHHM?

Define and better understand Perceived Benefits and Perceived Costs
What are some of the most significant costs and benefits to participating in the Mayor's Healthy Hometown?
How might these costs and benefits affect individuals' perceptions of the Mayor's Healthy Hometown? Do you feel this might differ between current network participants and prospective network participants, and if so, how?

Appendix 3: Study Consent Forms

Subject Informed Consent Document

Network Participation in Public Health: The Development of Instruments and Adapted Theory to Predict Stakeholder Participation in a Public Health Network

Investigator(s) name & address:
Dr. Bob Esterhay
485 East Gray Street
Louisville, Kentucky 40202

Dr. Judah Thornewill
485 East Gray Street
Louisville, Kentucky 40202

David Johnson, PhD(c), MPH
485 East Gray Street
Louisville, Kentucky 40202

Site where study is to be conducted:
Louisville Metro Department of Public Health and Wellness
400 East Gray Street
Louisville, Kentucky 40202

Phone number for subjects to call for questions: (502) 468-1752

Introduction and Background Information

You are invited to participate in a research study. The study is being conducted by Bob Esterhay, MD, Judah Thornewill, PhD and David Johnson, PhD(c), MPH. The study is sponsored by the University of Louisville, Department of Health Management and System Sciences at the School of Public Health and Information Sciences. The study will take place at the Louisville Metro Department of Public Health and Wellness. Approximately 20 subjects will be invited to participate.

Purpose

The purpose of this study is to better understand stakeholder intent to participate in the Mayor's Healthy Hometown Movement, and generate instruments that are predictive of this intent.
Procedures

In this study, you will be asked to participate in and provide responses during a semi-structured interview and/or focus group. Each of these qualitative data collection procedures will take no more than an hour, or hour and a half, respectively. Topics and questions will be about the network of study, personal involvement in the network, and perceptions about network-related activities, but at any time you may decline to answer any question that may make you feel uncomfortable. This qualitative data will help to create a survey, which will be deployed to a larger number of network participants. This study should conclude no later than August of 2015.

Potential Risks

There are no foreseeable risks other than possible discomfort in answering personal questions.

Benefits

The possible benefits of this study include a better understanding of networks, and those individuals that may or may not participate in network settings. The information collected may not benefit you directly. The information learned in this study may be helpful to others.

Compensation

You will not be compensated for your time, inconvenience, or expenses while you are in this study.

Confidentiality

Total privacy cannot be guaranteed. Your privacy will be protected to the extent permitted by law. If the results from this study are published, your name will not be made public. While unlikely, the following may look at the study records:

The University of Louisville Institutional Review Board, Human Subjects Protection Program Office, and Privacy Office.
People who are responsible for research and HIPAA oversight at the institutions where the study is conducted.
Government agencies, such as: The Department of Public Health and Wellness (LMDPHW)
Office for Human Research Protections (OHRP) and,
Office of Civil Rights

Data collected will be kept on a password protected computer, as well as password protected document formats including Word documents and/or Excel spreadsheets. Any audio recordings will be kept a locked box, until digitally transferred to the secure computer.

Conflict of Interest

This study involves a conflict of interest because the institution and investigator will be compensated for your participation in it. Please ask the investigator how the institution and investigator will benefit by your participation in the study.

Voluntary Participation

Taking part in this study is voluntary. You may choose not to take part at all. If you decide to be in this study you may stop taking part at any time. If you decide not to be in this study or if you stop taking part at any time, you will not lose any benefits for which you may qualify.

Research Subject's Rights, Questions, Concerns, and Complaints

If you have any concerns or complaints about the study or the study staff, you have three options.

You may contact the principal investigator at 502-468-1752.

If you have any questions about your rights as a study subject, questions, concerns or complaints, you may call the Human Subjects Protection Program Office (HSPPO) (502) 852-5188. You may discuss any questions about your rights as a subject, in secret, with a member of the Institutional Review Board (IRB) or the HSPPO staff. The IRB is an independent committee composed of members of the University community, staff of the institutions, as well as lay members of the community not connected with these institutions. The IRB has reviewed this study.

If you want to speak to a person outside the University, you may call 1-877-852-1167. You will be given the chance to talk about any questions, concerns or complaints in secret. This is a 24 hour hot line answered by people who do not work at the University of Louisville.

This paper tells you what will happen during the study if you choose to take part. Your signature means that this study has been discussed with you, that your questions have been answered, and that you will take part in the study. This informed consent document is not a contract. You are not giving up any legal rights by signing this informed consent document. You will be given a signed copy of this paper to keep for your records.

_____

Signature of Subject/Legal Representative Date Signed

_____ _____

Signature of Person Explaining the Consent Form Date Signed

(if other than the Investigator)

_____ _____

Signature of Investigator Date Signed

LIST OF INVESTIGATORS	PHONE NUMBERS
Dr. Robert Esterhay	(502) 852-6135
Dr. Judah Thornewill	(502) 417-1841
David Johnson, PhD(c), MPH	(502) 468-1752

UNIVERSITY OF LOUISVILLE.
SCHOOL OF PUBLIC HEALTH & INFORMATION SCIENCES

Network Participation in Public Health: The Development of Instruments and Adapted Theory to Predict Stakeholder Participation in a Public Health Network

Date: October 24, 2014

Dear Sir or Madame:

You are being invited to participate in a research study by answering the attached survey about understanding stakeholder intentions to participate in the Mayor's Healthy Hometown Movement. There are no known risks for your participation in this research study. The information collected may not benefit you directly. The information learned in this study may be helpful to others. The information you provide will provide insight to better understand networks and the factors may or may not influence participation. Your completed survey will be stored at SurveyMonkey. The survey will take approximately 5-10 minutes of your time to complete.

Individuals from the Department of Health Management and System Sciences at the University of Louisville School of Public Health and Information Sciences, the Institutional Review Board (IRB), the Human Subjects Protection Program Office (HSPPO), and other regulatory agencies may inspect these records. In all other respects, however, the data will be held in confidence to the extent permitted by law. Should the data be published, your identity will not be disclosed.

Taking part in this study is voluntary. By completing this survey you agree to take part in this research study. You do not have to answer any questions that make you uncomfortable. You may choose not to take part at all. If you decide to be in this study you may stop taking part at any time. If you decide not to be in this study or if you stop taking part at any time, you will not lose any benefits for which you may qualify.

If you have any questions, concerns, or complaints about the research study, please contact: David Johnson at (502) 468-1752

If you have any questions about your rights as a research subject, you may call the Human Subjects Protection Program Office at (502) 852-5188. You can discuss any questions about your rights as a research subject, in private, with a member of the Institutional Review Board (IRB). You may also call this number if you have other questions about the research, and you cannot reach the research staff, or want to talk to someone else. The IRB is an independent committee made up of people from the University community, staff of the institutions, as well as people from the community not connected with these institutions. The IRB has reviewed this research study.

If you have concerns or complaints about the research or research staff and you do not wish to give your name, you may call 1-877-852-1167. This is a 24 hour hot line answered by people who do not work at the University of Louisville.

Sincerely,

Robert J. Esterhay, MD
Investigator

Judah Thomewill, PhD
Co-Investigator

University of Louisville • Louisville, KY 40292
P: 502.852.3299 F: 502.852.3294 W: louisville.edu/sphis

Appendix 4: Literature Review Search Terms

Organizational Science

Terms: Organization, network, collaboration, collaborative, alliance, partnerships, value alliance, health, community health, population health, social capital

Authors: Tsai, Thornewill, Robey, Pfeffer, Lin, Hagedoorn

Information Systems

Terms: UTAUT, user acceptance of technology, health, community health, population health, social capital

Authors: Venkatesh, Davis, Bagozzi, Morris, Fishbein, Bandura, Bagozzi, Ajzen

Whole Networks

Terms: Whole Networks, collaboratives, network boundaries, network characteristics, network analysis, collaboration, Interorganizational contagion, health, community health, population health, social capital

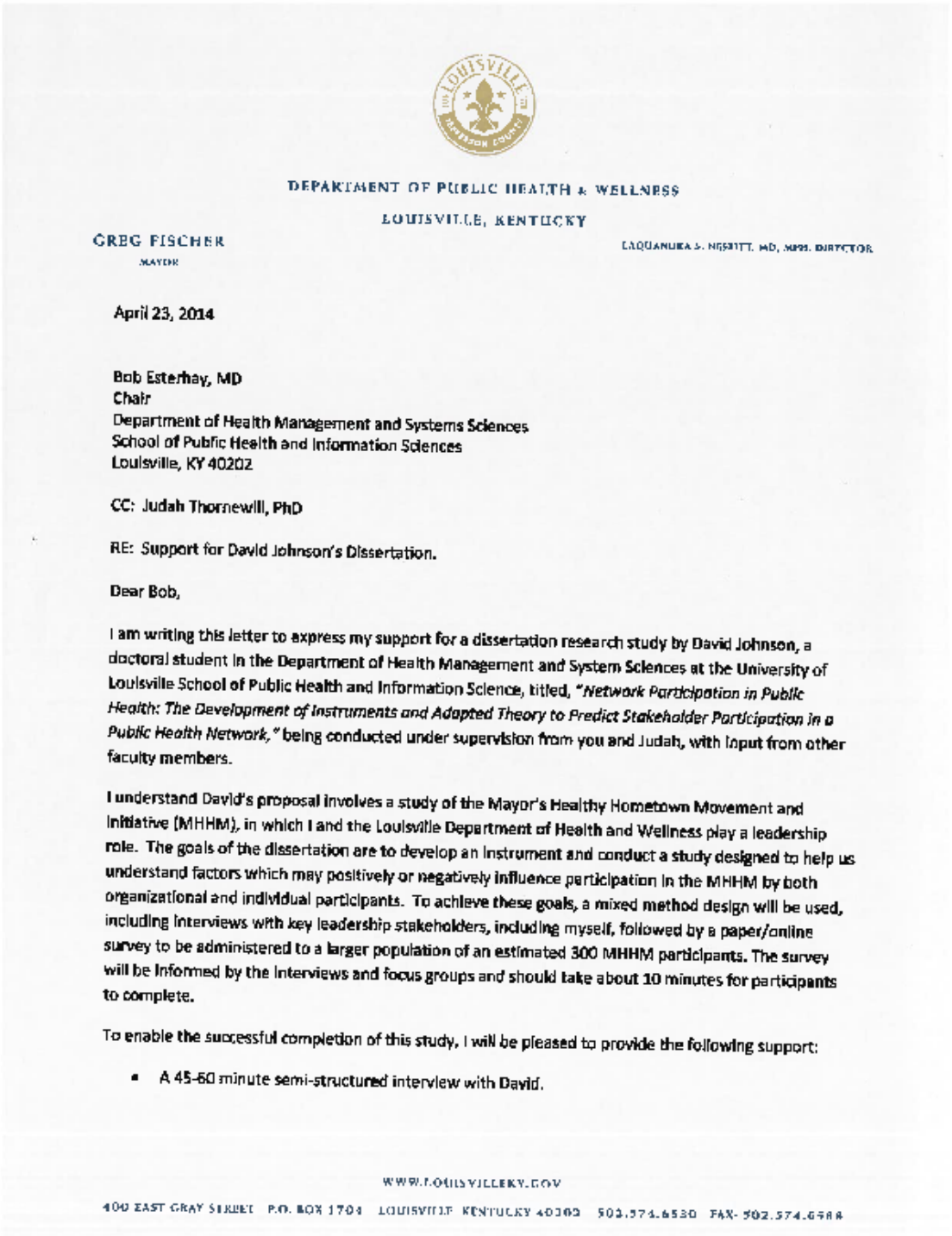
Authors: Provan, Fish, Galaskiewicz, Grannovetter, Gulati, Brass, Bazzoli, Borgatti, Lauman, Uzzi

Sociology, Pshychology, and Public Health

Terms: Community coalition, networks, collaboration, community partnersip, prevention, theory of reasoned action, theory of planned behahior, social cognitive theory, community capacity, health, community health, population health, social capital

Authors: Butterfoss, Ajzen, Fishbein, Bandura, Goodman, Wanderman, Winslow, Woolf, Varda, Marmot, Krackhardt, Isreal, Weiner

Appendix 5: Letter of Support



DEPARTMENT OF PUBLIC HEALTH & WELLNESS

LOUISVILLE, KENTUCKY

GREG FISCHER
MAYOR

LAQUANDRA S. NESBITT, MD, MPH, DIRECTOR

April 23, 2014

Bob Esterhay, MD
Chair
Department of Health Management and Systems Sciences
School of Public Health and Information Sciences
Louisville, KY 40202

CC: Judah Thornewill, PhD

RE: Support for David Johnson's Dissertation.

Dear Bob,

I am writing this letter to express my support for a dissertation research study by David Johnson, a doctoral student in the Department of Health Management and System Sciences at the University of Louisville School of Public Health and Information Science, titled, *"Network Participation in Public Health: The Development of Instruments and Adapted Theory to Predict Stakeholder Participation in a Public Health Network,"* being conducted under supervision from you and Judah, with input from other faculty members.

I understand David's proposal involves a study of the Mayor's Healthy Hometown Movement and Initiative (MHHM), in which I and the Louisville Department of Health and Wellness play a leadership role. The goals of the dissertation are to develop an instrument and conduct a study designed to help us understand factors which may positively or negatively influence participation in the MHHM by both organizational and individual participants. To achieve these goals, a mixed method design will be used, including interviews with key leadership stakeholders, including myself, followed by a paper/online survey to be administered to a larger population of an estimated 300 MHHM participants. The survey will be informed by the interviews and focus groups and should take about 10 minutes for participants to complete.

To enable the successful completion of this study, I will be pleased to provide the following support:

- A 45-60 minute semi-structured interview with David.

WWW.LOUISVILLEKY.GOV

400 EAST GRAY STREET P.O. BOX 1703 LOUISVILLE KENTUCKY 40202 502.574.6530 FAX: 502.574.6588

- Access to documents related to the MHHM such as meeting history, past meeting minutes, attendance records, supporting and founding documents, printed literature, and online social network information.
- Introductions to other key stakeholders to be invited to participate in focus groups.
- Access to MHHM email lists, mailing lists, listserve(s) and other descriptive information needed to identify potential participants to be invited to participate in the surveys.

I understand that this research will take time to complete, and I support the following preliminary timeline. The interviews are tentatively scheduled to begin in October, 2014. Survey invitations are tentatively scheduled to be sent out early 2015. I understand that this timeline is subject to changes.

In the event of leadership changes within the Mayor's Healthy Hometown Initiative or Louisville Metro, my support will include facilitating an explanation of David's research to new leaders and transition to new stakeholders for this research.

I understand that the research methods will be reviewed and approved by the U of L institutional review board (IRB) before David engages in actual interviews or surveys.

It is my pleasure to provide this support for David's research.

Sincerely,

LaQuandra Nesbitt, MD, MPH
Director

Louisville Metro Department of Public Health and Wellness
The Mayor's Healthy Hometown Movement

CURRICULUM VITAE

David Anthony Johnson, PhD(c), MPH, CPH
1330 Cherokee Road #5
Louisville, KY 40204
Cell: (502) 468-1752
Email: dajohn04@gmail.com

EDUCATION, CERTIFICATIONS, and TRAININGS:

University of Louisville,
Louisville, KY
PhD in Public Health (expected completion in summer, 2015), 2011-current

Dissertation Title: Network Participation in Public Health
Dissertation Committee Co-Chairs: Dr. Robert Esterhay and Dr. Judah Thornewill
Concentration: Health Management and System Sciences
Recipient of the 2011-2013 Graduate Research Assistantship for the Department of Health Management

National Board of Public Health Examiners
Certified in Public Health, 2010

Kentucky Cancer Program
Louisville, KY
Trained facilitator, Cooper Clayton Method to Stop Smoking, 2009

Our Whole Lives
Trained facilitator - Our Whole Lives: Sexuality and Our Faith, 2009

University of Louisville
Louisville, KY
Master of Public Health, 2008-2010
Concentration: Health Management and System Sciences
Recipient of the Health Management Scholarship for Excellence, Graduated with honors

University of Louisville
Louisville, KY
Bachelor of Arts, 1999-2005
Major: Biological Anthropology
Minor: Philosophy

Trinity High School
Louisville, KY
High School Diploma, 1995-1999

PROFESSIONAL EXPERIENCE:

2013-current University of Louisville Louisville, KY
Graduate Teaching Assistant, Course Director

- Developed curriculum for the new BS/BA Undergraduate degree in Public Health
- Incorporate innovative teaching methodology using Delphi Center principles
- Serve as a Teaching Assistant for each course in the undergraduate program
- Serve as Course Director for PHUN 430: Contemporary Issues in Public Health
- Assist other instructors with Blackboard functions and planning
- Perform other duties as required

2011-2013 University of Louisville Louisville, KY
Graduate Research Assistant

- Developed graduate level public health courses in the Department of Health Management
- Served as a Teaching Assistant for the first undergraduate sections of Public Health 101
- Served as Co-Instructor for PHMS 650: Network Leadership for two semesters
- Assisted the department with other course development, web-based content and statistical analysis

2012-2014 Bardstown Road Farmers' Market Louisville, KY
Executive Director

- Coordinated activities of 26 vendors in a commercial setting
- Compiled weekly newsletter for a growing mailing list of more than 2,100 recipients
- Maintained website, coordinated special events, and conducted social media marketing
- Prepared reports for and report to a board of governors

2010-2012 GroupPlus, LLC Louisville, KY
Associate/Consultant

- Project management utilizing electronic data and the Salesforce.com platform
- Developed future uses of collaborative capacity research tools
- Compiled and organized data for one-time Arizona state HIE assessment
- Created comprehensive reports
- Offered suggestions with strategic planning and implementation
- Marketed services to local clients and stakeholders

2005-2011 Paul's Fruit Market
Louisville, KY
Assistant Manager

- Worked with diverse staff and managed shifts and schedules for 20+ employees
- Resolved problems and managed seasonal transitions
- Operated at high level of customer service ensuring satisfaction
- Maintained inventory and nightly ordering

2009-2010 Volunteers of America Louisville, KY
HIV/STI Prevention Specialist

- Administered free HIV testing and counseling services to the public
- Maintained client case load for Prevention Case Management services
- Developed relationships with community leaders and organized testing events
- Conducted outreach for high-risk populations in public sex environments
- Organized and conducted HIV/AIDS and STD 101 courses for the public
- Organized, recruited for and conducted Many Men, Many Voices empowerment series

2009-2010 Family Health Centers Louisville, KY
Practicum Student

- Developed an innovative, dynamic new organizational chart using a systems perspective
- Created a database of employees and job titles to facilitate future updates of chart
- Assisted with the creation, implementation and outcome evaluation of annual patient experience survey
- Participated in executive and financial team meetings

2006 Trinity High School Louisville, KY
Long-Term Substitute Teacher

- Used critical thinking and communication skills to disseminate complex ideas
- Managed classroom of up to 30 students
- Held office hours and tutored students
- Created lesson plans

RESEARCH INTERESTS:

My research interests include: Public health networks, public-private partnerships and/or community coalitions; pedagogy in public health as well as workforce development through public health education; local food systems, nutrition, and food security as public health issues.

PUBLICATIONS:

In development: Two separate publications based upon dissertation research. One related to the research project itself, and the other related to the methodology and process of adapting a validated survey instrument (UTAUT) to a new context.

PRESENTATIONS:

I2A Conference, 2013 – Incorporation of Critical Thinking into Assessments for Public Health 101
Presenters: Pete Walton, MD and David Johnson, MPH

CURRENT VOLUNTEER WORK:

Gray Street Farmers Market
Responsibilities: Customer and vendor experience survey development and analysis; data management; creation of detailed reports; strategic planning. Also serve on the market board of governors.
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REFERENCES:

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