

THE EFFECTIVE RETURN OF BIBLICALLY RESPONSIBLE
EXCHANGE TRADED FUNDS

by

Stacie Rhodes

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Liberty University, School of Business

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Abstract

This dissertation research study was designed to contribute to the growing body of knowledge regarding the efficacy of a recently popular investment vehicle (ETFs; Ben-David et al., 2017) and the impact of values-based investment strategies on performance (Bidisha et al., 2017). Specifically, this research examined the risk-adjusted returns of biblically responsible ETFs, a subset of the larger category of socially responsible investment funds. The results of this study indicated there was no statistically significant difference between the intraday risk-adjusted return yields of the mid-cap and world large stock BRI ETFs and their respective benchmark indexes or the average intraday risk-adjusted return yield of their category grouping of equity-only faith-based investment funds. The two additional performance proxies, the Sharpe ratio and Jensen's α , revealed that the mid-cap BRI ETF (ISMD) had both a higher intraday Sharpe ratio and Jensen's α than the small/mid-cap equity-only faith-based funds and its respective benchmark index with no socially responsible investing agenda. One world large stock equity-only faith-based fund (GAGYX) had a statistically significant difference in the intraday performance from the Russell 3000 index. Further, the Sharpe ratio and Jensen's α for the fund were also higher than the benchmark.

Keywords: ETF, biblically responsible, SRI, equity-only faith-based investment funds

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Dedication

To my dad and mom, who have served as mentors, cheerleaders, and voices of reason, every step of this crazy journey. You have never wavered in your love and support, breathing life into dreams I feared to voice. You have always been my rock and source of inspiration, both personally and professionally, exemplifying there is no greater calling than to impact others for the glory of our Lord and Savior Jesus Christ. To my sister and niece, who are my advocates and encouragers to keep pushing when I face discouragement. You offered times of solace and laughter in the midst of the chaos, reminding me of the “why” behind this difficult endeavor. To my grandparents, who pray for me daily and offer endless excitement about each new opportunity. I am so proud to be a product of your legacy. To my tribe, my inner circle, my people - a collection of individuals that handled the myriad of emotions, obstacles, and disruptions to be a consistent presence in my world. You all are true reflections of the love of Christ, and I am undeservingly blessed by your friendship and kindness.

To God be the glory.

1 Thessalonians 5:24 – “He who calls you is faithful; he will surely do it.” (English Standard Version)

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Section 1: Foundation of the Study

The rapid growth of the financial planning industry has ushered in a new set of variables that require professionals to tailor their products to meet the specific needs of their diverse client mix (IBIS World, 2016). With the entrance of millennials into the investment arena, the intangible asset of social responsibility has become paramount to investment intrigue in specific corporations (Anderson, Kitces, & Lee, 2015; Huang, 2016). This is evidenced by the 76% jump over the past two years in assets invested using socially responsible investing (SRI) strategies, totaling over \$7 trillion assets (Huang, 2016; Lettau & Madhavan, 2018).

Biblically responsible investing (BRI) is an emerging subset of SRI that aligns investment options with the theological beliefs of the client. While academic literature discussing faith-based investing is limited (Beer, Estes, & Deshayes, 2014), the majority of research has focused specifically on mutual fund investment vehicles. However, by the end of 2016, more than 30% of overall trading volume and more than 10% of the total market capitalization traded on US exchanges were exchange-traded funds (ETFs; Ben-David, Franzoni, & Moussawi, 2017). The appeal of this specific investment vehicle is multi-faceted (Arugaslan & Samant, 2014; Ben-David et al., 2017; Hodaszy, 2017; Hougan, 2014; Huang & Lin, 2011), with growing interest in socially responsible ETFs that have indicated to perform better than their corresponding market index during studied periods (Bidisha, Lee, & Singh, 2017). By focusing the scope of examination to biblically responsible ETFs, a gap in available academic knowledge exists, limiting the information available to Christian investors for theologically aligned investment considerations.

Background of the Problem

When considering the investment industry, there is a significant amount of deliberation in which companies to invest. Financial support of specific companies is provided through the purchase of publicly-offered funds such as mutual funds, close-end funds, unit investment trusts, and exchange-traded funds (Financial Industry Regulatory Authority, 2018). Given the complexities of these investment decisions, many investors employ an agent to invest on their behalf. However, the decision must include both parties given the inherent risk, implications of investment, and the values of the client. The struggle arises as decisions must often be made that increase the benefit for certain stakeholders at the sacrifice of others.

The most rudimentary information would suggest a type of evaluation that would analyze the performance of potential investment vehicles and encourage the investment of those expected to outperform their peers within the risk tolerance of the client (Blanchett, 2015). However, financial planning is also a goal-focused industry (Blanchett, 2015). As a result, while investing is often a process of achieving a goal, the financial advisor reaches further to build an appropriate portfolio that holds investments that may more closely morally align with the client (Blanchett, 2015). This alignment is becoming more possible with the growing number of alternative investment products comprised of screened companies.

Research surrounding the various screening processes implemented indicates that preferences among socially responsible investors differ and emphasizes different views of SRI can be complementary (Derwall, Koedijk, & Ter Horst, 2011). BRI falls under the umbrella of SRI as it applies more stringent standards in the screening process that require moral and belief-driven alignment (Lai, 2012). As this concept of BRI has grown in popularity, more types of publicly-offered funds are utilizing the aforementioned screening techniques that appeals to these

values-based investors. One such emerging investment vehicle is biblically responsible ETFs. With the limited availability of scholarly research surrounding these biblically responsible ETFs, decisions regarding investment are challenging. Thus, additional evaluation regarding an effective portfolio mix is warranted and necessary for those seeking a balance between BRI opportunities and return on investment.

Problem Statement

The problem to be addressed by this applied doctoral research study is the lack of sufficient relevant evidence clarifying the effective return of BRI ETFs, as compared to other equity-only faith-based investment funds and their benchmark non-SRI indexes. While literature associated with SRI funds and faith-based mutual funds has continued to build, the performance of these extensively screened funds remains controversial as research specific to BRI vehicles other than mutual funds is limited yet warranted (Stultz, 2016).

Lai (2012) found that the average return and effective return for 14 belief-based indexes studied have similar performance compared to their benchmarks, with the effective return being the net of the average return less the expense ratio. Narend and Thenmozhi (2016) emphasized that ETFs not only provide exposure to various asset classes, but they are also preferred over mutual funds because of their low expense ratios. Geczy (2005) recognized the significant differences in expense ratios between unscreened (average of 1.1%) and screened funds (average of 1.3%) while other research emphasizes that ETF transaction costs are not as low as they might seem and are often more costly than they appear (Angel, Broms, & Gastineau, 2016). Given this current gap in literature, the researcher designed this study to examine the effective return of BRI ETFs as compared to other equity-only faith-based investment funds and their benchmark non-SRI ETFs.

Purpose Statement

The purpose of this descriptive quantitative study is to examine the intraday effective return of BRI ETFs as compared to other equity-only faith-based investment funds and their benchmark non-SRI indexes. The central focus of this study targets the effective return of each examined investment fund by utilizing the fund NAV to calculate the intraday mean return yield for the period studied. The NAV represents the true book value of the funds, providing an effective return value to use for comparative purposes. Further, two performance proxies, Sharpe ratio and Jensen's alpha, are widely used by practitioners to assess the performance of funds and portfolios (Bidisha et al., 2017). The incorporation of these additional performance measures allows for a more robust analysis of fund performance, providing more insight and application considerations for the industry.

As existing literature has researched the impact of screening on the financial performance of a fund (Lesser, Rößle, & Walkshäusl, 2016), further insight into the drivers of outperformance or underperformance of BRI funds is warranted. Most socially responsible mutual funds' managers are not eager to give up financial performance in favor of higher scores associated with environmental, social, and governing aspects after screening companies for inclusion in the portfolio and beginning the asset allocation process (Utz, Wimmer, Hirschberger, & Steuer, 2014). This study compared the performance of biblically responsible investment funds to other types of faith-based funds, as well as conventional benchmark funds with no socially responsible agenda.

Nature of the Study

The quantitative method with an observational descriptive research design was chosen for this applied doctoral research study. The below discussion sought to defend the method and

design chosen for this specific applied doctoral study. Also described are the rejected methods and design alternatives, with the reasoning for rejection explicitly provided.

Quantitative method. The quantitative method was chosen as the performance and underlying variables of investment funds were reviewed. This type of study is preferred given the type of performance analysis and comparison between funds (Creswell, 2013). A quantitative approach was appropriate as a theory, consisting of variables measured by numbers, was tested using statistics to explain or predict the phenomena of interest (Yilmaz, 2017).

Qualitative method. A qualitative case study is best used when a unique or specific issue or concern is identified as needed to be described, detailed, or understood (Creswell & Poth, 2017). While the qualitative method would be used to consider the attitudes or perspective of investment fund managers (Creswell & Poth, 2017), it does not address the nature of this study and is outside of the scope of this project. As such, the quantitative method is more useful for data analysis (Creswell, 2013). A mixed-method study would also be inappropriate given the lack of concurrent or sequential designs that are common in mixed-method research (Driscoll, Appiah-Yeboah, Salib, & Rupert, 2007).

Observational descriptive research design. An observational descriptive research design was chosen as more than one group of data were being examined in this applied doctoral research study. A descriptive research design seeks to describe the current status of a phenomenon or variable with data collection being mostly observational in nature (Creswell, 2013). The archival data of fund performance for each chosen index were extracted from Bloomberg and augmented by Morningstar, a reputable source utilized by Financial Industry Regulatory Authority, with performance being evaluated based on the results of the chosen statistical analyses. As the chosen variables were manipulated during the analysis, the

examination was observational in nature. Other quantitative designs considered and rejected were as follows: (a) correlational, (b) experimental, and (c) quasi-experimental.

Correlational research design. Correlational quantitative research design has been defined as seeking “to describe the relationship among variables rather than to infer cause and effect relationships” (Stultz, 2016). While this design facilitates the exploration of the relationship between variables using statistical analyses and is mostly observational in terms of data collection (Creswell, 2013), it was not appropriate for this specific project. This study was designed to examine the impact of the associated expense ratio of the investment fund on the effective return of biblically responsible ETFs by utilizing the fund NAV to calculate the intraday return yield, a correlational design would not support this study.

Experimental research design. Experimental research involves an experimental and control group as the researcher would introduce an experimental procedure to one of the groups to determine its effectiveness (Abbott, 2013). With this type of research design, researchers attempt to control for all variables except for the independent variable subject to manipulation (Creswell, 2013). As history was used to review the data, an attempt to control for external factors that could affect the data was irrelevant and unnecessary.

Quasi-experimental research design. Similarly, quasi-experimental research designs also attempt to test the effectiveness of an experimental procedure by using control and experimental groups that are naturally occurring (Abbott, 2013). While the independent variable is not manipulated and groups are not assigned, control groups are identified and exposed to the variable (Creswell, 2013). However, as experimental procedures were not employed in this study, this type of research design was also rejected.

Summary of the nature of the study. In summary, the observational descriptive design was most appropriate for the quantitative research method chosen for this study. This was due to the study's utilization of statistical analyses tools to examine historical data of the chosen investment funds to examine the impact of the associated expense ratios on the effective return of the investment funds by utilizing the fund NAV for the intraday return yield calculation. As a phenomenon was described through observation rather than through experimental procedures, other quantitative research designs were deemed inappropriate.

Research Questions

The below section provides three research questions that guided this study. The first was as follows: Are the intraday effective returns of BRI ETFs equivalent to other equity-only faith-based investment funds (e.g., mutual funds)? The risk-adjusted yields and effective returns of biblically responsible ETFs were compared to those of other Christian-based socially responsible investment funds during the period of study. While BRI funds are generically used for various investment vehicles, research comparing the performance of these two similar, yet different, investment options could prove insightful given the ongoing discussion of the associated expense (Narend & Thenmozhi, 2016) and performance of these funds.

The second research question considered: Are the effective returns of BRI ETFs equivalent to benchmark funds that do not have a specific socially responsible investing agenda? The risk-adjusted yields and effective returns of BRI ETFs were compared to that do not have a specific socially responsible investing agenda (i.e., benchmark funds). The final applicable research question was as follows: Are the effective returns of equity-only faith-based investment funds equivalent to benchmark funds that do not have a specific socially responsible investing agenda? The risk adjusted yield and effective return of equity-only faith-based investment funds

were compared to the respective benchmark funds to contribute to the ongoing research discussion regarding the efficacy of morality-driven investment decisions.

This research will add to the body of literature that sought to examine if belief-based investing was in the best interest of the client, which is specifically relevant to certified public accountants who offer a range of services. These accounting professionals are required by the American Institute of Certified Public Accountants (AICPA) to provide relevant information necessary for the client to make an informed decision (American Institute of Certified Public Accountants, 2018). This research seeks to provide additional information specific to these new investment opportunities, further developing a more robust analysis to better meet both the monetary and moral needs of the client.

Hypotheses

H_{1A}: There is a statistically significant difference between the intraday effective return of BRI ETFs and other equity-only faith-based socially responsible investment funds.

H₁₀: There is no statistically significant difference between the intraday effective return of BRI ETFs and other equity-only faith-based socially responsible investment funds.

H_{10A}: There is no statistically significant difference between the intraday effective return of mid-cap blend BRI ETFs and other mid-cap blend equity-only faith-based socially responsible investment funds.

H_{10B}: There is no statistically significant difference between the intraday effective return of world large stock BRI ETFs and other world large stock equity-only faith based socially responsible investment funds.

H2_A: There is a statistically significant difference between the intraday effective return of BRI ETFs and benchmark funds that do not have a specific socially responsible investing agenda.

H2₀: There is no statistically significant difference between the intraday effective return of BRI ETFs and benchmark funds that do not have a specific socially responsible investing agenda.

H2_{0A}: There is no statistically significant difference between the intraday effective return of mid-cap blend BRI ETFs and their benchmark funds that do not have a specific socially responsible investing agenda.

H2_{0B}: There is no statistically significant difference between the intraday effective return of world large stock BRI ETFs and their benchmark funds that do not have a specific socially responsible investing agenda.

H3_A: There is a statistically significant difference between the intraday effective return of equity-only faith-based investment funds and benchmark funds that do not have a specific socially responsible investing agenda.

H3₀: There is no statistically significant difference between the intraday effective return of equity-only faith-based investment funds and benchmark funds that do not have a specific socially responsible investing agenda.

H3_{0A}: There is no statistically significant difference between the intraday effective return of mid-cap blend equity-only faith-based investment funds and benchmark funds that do not have a specific socially responsible investing agenda.

H3_{0B}: There is no statistically significant difference between the intraday effective return of world large stock equity-only faith-based investment funds and benchmark funds that do not have a specific socially responsible investing agenda.

Theoretical Framework

The two theories chosen for this descriptive quantitative study are the modern portfolio theory and the agency theory. The modern portfolio theory is grounded by the work of Markowitz (1952) with expansion by other more recent authors. The agency theory was founded and explored by Eisenhardt (1989), Jensen and Meckling (1976), and Ross (1973).

Modern Portfolio Theory. As most investors do not hold only one type of investment or mutual fund (Shipway, 2009), a number of diversified funds is often chosen to help balance the risk of their portfolios (Miccolis & Goodman, 2012). However, this theory holds that systematic risks, risks inherent in the market or in an asset class as a whole, are beyond the influence and control of the investor (Lydenberg, 2016). Consequently, only idiosyncratic contributions to the portfolios' performance, positive or negative, relative to that of the market should be associated with the advisor, but not systematic rewards or risks of the market (Lydenberg, 2016).

As such, the quantity and the variety of the investment fund (i.e., mutual funds versus ETFs) is a required consideration when building a client's ideal portfolio. This theory holds two basic assumptions for the risk subject to manipulation of the portfolio manager. First, the risk associated with their portfolio should be mitigated by the achieved rate of return (Elton, Gruber, Brown, & Goetzmann, 2014). Second, this theory assumes that an option with expected lower risk will be chosen over an option with higher risk when faced with the choice between the two options with equivalent returns (Elton et al., 2014). As such, fund managers serving clients that seek to invest based on their beliefs and values must understand the underlying risk of each

investment option while appropriately weighing the priorities of the client as some authors argue that SRI portfolios are less diversified because of the screening process during the portfolio formation (Lean, Ang, & Smyth, 2015).

Included in the achieved rate of return should also be the expense ratio that is comprised of transaction costs and managements fees associated with tracking the fund. These fees are reported collectively as the expense ratio of the fund and are included in the NAV calculation. Thus, the effective return of the index fund takes into consideration the fees associated with using the investment vehicle (Lai, 2012) and should be considered in the achieved rate of return assumption of the modern portfolio theory.

Also underlying this theory is the assumed systemic risk, which are risks inherent in the market or in an asset class as a whole (Lydenberg, 2016). These types of risks are beyond the control or influence of investment professionals and should not be determining factors that penalize or give credit for losses or gains attributable to the “systemic” rewards or risks of the market (Lydenberg, 2016). Thus, because of these inherent risks, this theory suggests that the expected return of an efficient portfolio that consists of diversified, non-correlated, stocks can be maximized by spreading risk (Lean et al., 2015). Further, relative to that of the market, the idiosyncratic contributions to their portfolios’ performance, positive or negative, should be a determining factor in the performance evaluations of the investment manager (Lydenberg, 2016). If appropriately employed, this foundational theory will direct advisors or investment managers toward specific investments that will accomplish both the needed rate of return and the mitigating risk. However, in regards to more heavily screened investment options, such as socially responsible investment funds, both the risk and the core beliefs of the individual are considered (Fitzpatrick, Church, & Hasse, 2012). While some research indicates that faith-based

funds perform similar to the market during any market state (Lesser et al., 2016), others found that Christian-based funds failed to outperform their benchmark funds during specific periods (Stultz, 2016). Ultimately, social and belief goals of the investor are often included in the investment decision-making process (Ooi & Lajbcygier, 2013). These values could impact the investment offerings and chosen investment vehicles that bear similar risk.

Agency Theory. The principal and the agent are the two primary parties in an agency arrangement where the agent agrees to act on behalf of the principal in a given matter (Shapiro, 2005). However, issues may arise as each of the two parties may possess different approaches to solving a problem (Jensen & Meckling, 1976) with the yield to be the outcome as specified by the principal (Barnard, 1968). Thus, a conflict of interest can be the product of this relationship when the agent engages in self-interest behavior and chooses to not act in the best interest of the principal (Guillebaud, 1942).

As a result, research suggests the agent in a business-agent relationship is more likely to act in the interest of the principal if the agent has equity in the firm (Fama & Jensen, 1983). Eisenhardt (1989) further theorized that the agent is more likely to act in the interest of the principal when the actions are outcome-based. The outcomes generate information metrics that can then be monitored by the principal to evaluate the agent's behavior (Anderson, 1985).

Risks are inherent within this process but can be reduced when the agent consciously chooses to focus on meeting the desires and interest of the principal (Tan & Lee, 2015). In regards to faith-based investment opportunities, the agent must not only focus on achieving a tangible rate of return, but also balance the personal belief-based investing goals of the client. Specifically, in this niche type of investing, a dualistic approach by the agent is required to

satisfy both the interest and needs of the client in a creatively appropriate manner, while also clearly communicating the pertinent outcome information.

The agent within this research project is the accountant or financial advisor of the client. The assumed risks within the agency theory that could weaken or compromise the relationship between agent and client are as follows: (a) goal asymmetry, (b) risk asymmetry, and (c) information asymmetry (Tan & Lee, 2015). For example, the client may have specific goals in regards to the rate of return for the investment fund, how much risk they are willing to take by choosing a varied level of portfolio aggression, and the quantity of information specific to each type of fund. While the agent may have different personal goals, the assumed risks of this theory are alleviated when the agent chooses to act in the interest of the client despite the divergence of beliefs (Tan & Lee, 2015).

For the purpose of this applied doctoral research study, the principal in the agency relationship was the client. When specifically evaluating the agent's role in guiding individuals interested in BRI vehicles, the modern portfolio theory and the agency theory are complimentary and symbiotic as the agent must not only consider the associated risks but also the unique interests of the client. Further, the agent is responsible for providing the client with detailed implications of the available opportunities so that the client can make the most informed decision.

Definition of Terms

The following terms were used throughout the study, but the below definitions were confined to this specific project:

Biblically responsible: For the purpose of this study, these terms broadly define all faiths associated with one or more Christian groupings (i.e., Catholic, Protestant, and Evangelical)

(Kathman, 2012, November 5). This definition aligns with the categorization of funds by the data provider, Morningstar. A larger variety of BRI funds are included by using this more broad definition.

Assumptions, Limitations, Delimitations

The following section defined the assumptions, limitations, and delimitations inherent to this study. Recognizing and discussing these elements was paramount to providing an objective perspective of the study and its findings. A general overview of each was provided below.

Assumptions. The main implied assumption for this study was that all data gathered related to the reviewed investments in this study accurately reflected the performance and associated ratios. The data were pulled from a reputable source (i.e., Morningstar). Morningstar is highly regarded by Financial Industry Regulatory Authority (FINRA), an organization dedicated to effectively and efficiently regulate the security industry for the sake of investor protection and market integrity (Financial Industry Regulatory Authority, 2018). As such, the Morningstar rating system for investment products has been a reliable source for guidance since the 1980s (Hoovers, 2018). The data used were assumed to be free of material errors that would negatively affect the outcome of the study. If this assumption was proven false, then the statistical analysis performed over the underlying data were voided with the results nullified. In an effort to mitigate this risk, additional credible resources were used (e.g., Yahoo Finance, and The Wall Street Journal) to confirm the ending prices of the funds used in the study. Further, the ETFs included in the sample of this study belonged to a passive operation strategy. This means the trend of ETF returns were similar to the market, such that they were not influenced by stock-picking and market timing abilities of the fund manager. Also, the management expense ratios

included in this study were solely those associated with the fee charged by the managers of the portfolio. For the purpose of this study, all investment funds were considered no-load funds.

Limitations. The leading limitations of this study were the historical nature of the data and the state of the market during the period studied. As historical data did not guarantee future returns, the results of this study provided guidance on future investment considerations but did not guarantee future performance. Similarly, as this study was limited to a specific span of time, the performance of the funds were impacted by the current state of the market and the results may have varied if a different period of time were reviewed with a varied set of market conditions.

Delimitations. Designed to answer a specific set of questions, this study targeted the effective return of biblically responsible ETFs. The performance of these funds was compared to other BRI type funds as well as to benchmark funds. Other more broad types of socially responsible investment funds such as mutual funds, outside of faith-based mutual funds, were not included in this study. Further, this study only included investments that fell under the mid-cap blend and world large stock categories, as defined by Morningstar.

Significance of the Study

The significance of this study was multi-faceted as it reduced gaps in the current body of literature specific to the effective return of biblically responsible ETFs. Past research has heavily focused on the performance of faith-based mutual funds rather than targeting this specific investment vehicle. Furthermore, this study had an intentional focus of the expense ratio of biblically responsible ETFs as compared to other BRI funds and non-SRI ETFs by utilizing the NAV for the intraday return yield calculation for each fund studied.

The biblical implications of this research are significant as many investors base their investment choices on their personal beliefs and values. Finally, the topic of this study is relevant to the accounting profession given the potential financial impact of these investment decisions on the individual that the accounting professional is dedicated to serve. As required by AICPA code of conduct (American Institute of Certified Public Accountants, 2018), the CPA employed by the client is required to provide all relevant information to make an informed decision. As such, understanding the financial implications of faith-based investing is an essential discussion for those interested in integrating values into investment considerations.

Reduction of gaps. Biblically responsible investments, specifically ETFs, are very new given the more recent introduction of conventional ETFs in the past several years (Dimkpah & Ngassam, 2013). As research regarding Christian-based socially responsible investment funds is still limited, the addition of research surrounding this type of investment vehicle will fill a gap in current literature. Further, while current literature has mixed conclusions concerning the performance of BRI funds, few studies have delved into the effective return of the investment fund by specifically focusing on the expense ratio of the various investment fund options. This research will build on the foundational knowledge to provide investors with more acute information that could impact their investment considerations.

Implications for biblical integration. The below section sought to integrate a Biblical worldview into the consideration of socially responsible and BRI funds as these values will most often be the motivation for investment. Specifically, the discussion highlights how BRI products provide opportunities for differentiation that indicates a degree of separation as a result of the believer's calling. It can also be argued that this type of product encourages community

enrichment and inspires creativity as solutions to seemingly impossible problems are generated when ignoring inherent assumptions and constraints.

Set Apart. In 1 Peter 2:9, Peter encourages the suffering Christians that they are a “chosen people, a royal priesthood, a holy nation, a people belonging to God” that they “may declare the praises of him, who called you out of a darkness into his wonderful light” (New International Version). The referenced passage highlights the distinction of Christ followers as those that are set apart for a specific calling. Similarly, Revelli (2017) revealed the importance of work by affirming its importance to God while contradicting the common belief that value is merely instrumental. Believers are called the royal priesthood, carrying a responsibility of separation, sanctification, and communication with God. Paul exhorts believers to resist conforming to the patterns of the secular, but instead focus on renewing the mind daily in order to determine the will of God. “Do not conform to the pattern of this world, but be transformed by the renewing of your mind. Then you will be able to test and approve what God's will is--his good, pleasing and perfect will” (Romans 12:2, NIV). Arguably, the pattern of this world is to pursue the highest return on investment regardless of a cost. But consideration must be given to those choosing to invest in companies that are enriching their own community while also providing an appropriate rate of a return. Such a decision to invest in companies that align with the individual's core beliefs could be considered another degree of separation.

Enriched community. Currently, those engaged in business evaluate the meaning of work with an individualistic perspective that is focused on personal achievements rather than public contributions (Hardy, 1990). Ultimately the consideration should not be solely on the return of investment (ROI), but rather on how the organization can best serve and flourish the community, given the assets under control and the core competencies of the organization (Van

Duzer, 2010). The focus must turn from personal gain to community enrichment for all stakeholders to experience true flourishing. “Do nothing out of selfish ambition or vain conceit. Rather, in humility value others above yourselves” (Philippians 2:3, ESV). Many would argue that socially responsible and BRI funds address these considerations as they highlight the qualitative benefits, rather than solely the quantitative return.

The Third Way. While decision makers often arrive at two alternatives, Van Duzer (Van Duzer) suggests pushing for closer examination of a “third way” (Van Duzer, 2010, p. 119) – a more creative alternative not previously considered. The individual’s confidence to find this “third way” is grounded in the realization of being a unique product of God’s handiwork. “For we are God’s handiwork, created in Christ Jesus to do good works, which God prepared in advance for us to do” (Ephesians 2:10, NIV). The visual and strategic thinking decision model that exemplifies this idea is the thinking outside of the box theory that requires the decision maker to ignore the predetermined boundaries and consider outside alternatives (Krogerus & Tschäppeler, 2012).

Exploratory innovation is another application of this theory as its objective is to offer new designs, products, or services to meet the needs and demands for emerging customers (Li, Lin, & Tien, 2015). However, the needs of existing customers are also considered as this concept emphasizes improving and expanding current products and services (Li et al., 2015). The concept of BRI funds satisfies this consideration as these types of investments seek to provide a new product - screening all companies to address the needs of current and new investors that are acutely aware of their social responsibility and biblically aligned principles.

Relationship to Field of Study. The AICPA purports that an accountant is an expert on a wide range of financial issues (American Institute of Certified Public Accountants, 2018). As

such, one of the primary considerations of client service requires advising clients on the best investments for their financial resources. The values of the client, in addition to their monetary goals, must be considered while fulfilling the role of an agent. As such, knowledge regarding various types of value driven investment opportunities is relevant and essential for a prudent accounting professional.

A Review of the Professional and Academic Literature

A review of the available academic literature was completed, with a summary of key concepts applicable to the proposed research questions and hypothesis included in the below discussion. Comparative and contrasting viewpoints were explored as to present a holistic perspective of relevant research. The review is limited to the most important aspects of the various theories as applicable to a BRI strategy.

While a plethora of literature regarding SRI is now available, the concept of BRI in academia is relatively new. This further purports the need for this specific research project. However, with limited academic authorities, an evaluation of literature related to the broader category of SRI was conducted. The below discussion is divided into seven categories: (a) industry, business purpose, corporate reputation, and corporate social responsibility, including a discussion of the modern portfolio theory and agency theory; (b) definition, history, criticisms, types of SRI Funds, and screening techniques; (c) current research on the performance of SRI/BRI portfolios; (d) characteristics, benefits, and criticisms of ETFs; (e) current research on the performance of ETFs; (f) research variables; and (g) gaps in the currently available body of research and knowledge regarding global BRI funds.

Industry, business purpose, corporate reputation, and corporate social responsibility. Provided below are current indicators of the direction of the financial planning

industry which support the importance of this research. Further, a discussion of the purpose of business, which directly impacts corporate reputation, is warranted as it underpins corporate social responsibility initiatives valued by an emerging type of investor. Finally, corporate social responsibility is defined with its main objectives identified.

Financial Planning Industry. In a 2016 survey conducted by the American Psychological Association (American Psychological Association), 61% of Americans identified money worries as a main cause of stress. This is not a new phenomenon, but rather a growing concern as a 2015 nationwide study of consumer financial health indicated that 57% of those polled within the United States were struggling with personal financial issues (Gutman, Garon, Hogart, & Schneider, 2015). While individuals try to make decisions on a rational basis, their cognitive abilities and external environmental factors often limit their decision making process (Olga & Monowar, 2015). As a result, the individual will most often make a “satisfying” decision as opposed to the “optimal one” (Olga & Monowar, 2015), evidencing the need for an objective perspective that understands the tendencies of investors. As the individual’s psychology has proven to be one of the most important factors that affect the investor’s perception about the market and his attitude toward risk (Young, Gudjonsson, Carter, Terry, & Morris, 2012), the investment style is determined by the risk-taking attitude (Bali, Demirtas, Levy, & Wolf, 2009).

This understanding of the investor’s mentality has been pivotal for the financial planning industry as professionals seek to grow in their understanding of consumer needs and goals. A recent financial planning study revealed that millennials are focused on investing and doing social good as they pursue entrepreneurial opportunities and startups (Anderson et al., 2015). Their entrance and ability to enter the investment world has created a client mix of investors that

includes a plethora of investor types and ages, further justifying the rapid rate of growth of the financial planning industry (IBIS World, 2016). Ultimately, the industry expects a growing number of equity markets and affluent households will increase total assets under management for the financial management industry in the coming years (IBIS World, 2016). However, with this investor diversification, significant consideration as to what type of companies warrant investment has garnered growing attention as one-third of millennials consider socially responsible factors when they invest (Huang, 2016). With this in mind, an understanding of the modern portfolio theory is pivotal to an investment manager's considerations of the risk subject to manipulation in the client's investment portfolio.

Modern Portfolio Theory. This theory holds two basic assumptions: (a) the risk associated with the portfolio of the client should be mitigated to the achieved rate of return and (b) the option with a lower risk will be chosen over an option with higher risk when faced with a choice between the two as all investors are considered risk averse (Elton et al., 2014; Shipway, 2009). The following three factors must be understood to effectively grasp this theory of evaluating effective returns for any given level of risk: (a) the expected return, (b) risk of each component of the portfolio, and (c) the way each behaves in relation to the other (Shipway, 2009). Starting with the most simplistic of the three factors, expected return is the expected annual return on an investment held over time. A review of the average return of an investment is conducted in subsequent years to consider the value of the investment against the expected value previously set. The second statistical measure proposed by Markowitz is the standard deviation, which provides a measure that describes a range above or below the average that is likely to occur in two out of the three years (Shipway, 2009). Investments with high volatility

have a resulting high standard deviation just as those with low volatility are represented by low standard deviations (Shipway, 2009).

The final factor is correlation – the measure of how similar the ups and downs in value of any two investments. As such, the Modern Portfolio Theory is founded on the requirement of a portfolio comprised of a variety of assets that fluctuate in value at different times to each other (Shipway, 2009). This diversification of a client's portfolio with various investment vehicles has proven to be an effective strategy (Miccolis & Goodman, 2012). But the question of how this theory applies to the unique goals of emerging investors has been of significant interest to researchers as both the risk and core beliefs of the individual must be considered when evaluating the inclusion of more heavily screened investment options (Fitzpatrick et al., 2012). Several authors found that Christian-based funds failed to outperform their benchmark funds during specific periods (Stultz, 2016) while other studies found that faith based funds performed similar to the market during any market state (Lesser et al., 2016).

Another author confirmed the hypothesis that the investment portfolio risk, understood as return rate volatility, was reduced when greater transparency of public companies in disclosing non-financial (ESG) data were provided (Czerwińska & Kaźmierkiewicz, 2015). This non-financial data reporting directly correlated to increased transparency which allowed for predictability of companies' operations (Czerwińska & Kaźmierkiewicz, 2015). While the overall level of reporting on non-financial data are low for the Polish market studied, an over-average return rate and lower return rate volatility as well as lower forecasting error in return rates is a relevant outcome that highlights potential implications of the faith-based investment strategy (Czerwińska & Kaźmierkiewicz, 2015). However, further complications ensue as correlations between different assets change over time. Efficiency is rarely consistently attained

as returns and correlations are constantly changing (Shipway, 2009) which impacts the underlying agency theory as well.

Agency Theory. In an outcome-based situation (e.g., quantitative returns), agents are more likely to act in the interest of the principal (Eisenhardt, 1989). Further, if the agent has equity in the firm, the interest of the principal is more likely to be considered (Fama & Jensen, 1983). While risks are inherent throughout the process, these risks can be reduced when the desires and interests of the principal consciously remain the focus of the agent (Tan & Lee, 2015). But there remains the potential misalignment in the goals, preferences, and actions between agent and principal (Eisenhardt, 1989; Nyberg, Fulmer, Gerhart, & Carpenter, 2010). There has been continued study in specific means of minimizing agency problems such as improving the monitoring, by a board of directors, of managers activities; corporate control that disciplines mischievous managers; and agent equity ownership (Nyberg et al., 2010).

In their study of the Australian market, Kingston and Weng (2014) concluded that option-type payoff profiles were prevalent as they tend to encourage excessive exposure to growth assets. This was a concern of the researchers as other financial planning research indicates that investors reaching the cusp of retirements should allocate some funds into a safe, interest-bearing asset (Kingston & Weng, 2014). However, the authors found this was often not the case, as the entirety of the client's wealth was often included in an aggressive portfolio. Given the age and retirement goals of the client, they should not have been exposed to extensive risk. Such is an example of the conflict of interest between the principal and agent.

As it relates to faith-based investment opportunities, a dualistic approach is essential in order to create an investment portfolio that addresses both the moral preferences of the investor, as well as, the expected returns. If the agent has different personal goals than the client, but

chooses to act in the interest of the principal, the assumed risks of this theory are minimized (Tan & Lee, 2015). However, the consistent alignment of these goals is an issue that remains prevalent in the industry, especially with this niche investment strategy that requires both the risk and personal beliefs of the investor to be considered (Fitzpatrick et al., 2012). As such, the agent must continue to proactively communicate information metrics of the performance of funds to the principal to allow the client the opportunity to evaluate the behavior of the agent (Anderson, 1985).

Both of these theories were essential in the study of faith-based investing as they underpinned many of the decisions of the agent, whether consciously or subconsciously. As the financial planning industry continued to grow with varied objectives from emerging investors, these foundational theories must be considered when incorporating a niche type of investment strategy. However, the development of socially responsible initiatives hinges on the underlying beliefs regarding the purpose of business, just as the investor's choice to invest is subconsciously influenced by their own perception of the purpose of business.

Business purpose. Creating economic value (maximizing corporate value) and reducing the firm's financial risk is the primary goal of corporate financial management (Brealey, Myers, & Allen, 2006). The common understanding is that when senior managers are strongly influenced by shareholders, they are forced to make tradeoffs between other key stakeholders – employees, suppliers, customers, governments, and labor unions (Emiliani, 2001). However, despite the growth of corporate responsibility and ethical business movement, there continues to be a swell in dissatisfaction with the many moral failures in both developed and emerging markets (Karns, 2011). The most recent issues include sexual harassment cases, illegal ties and funding from international governments, security failure data breaches, bribery charges, and

falsified information (Shen, 2017). As a result, research has revealed that while shareholder value is important, it should not be the only driver (Emiliani, 2001). Instead, a balance should be achieved between the following factors: employment creation, contribution to society, technological strength, environmental responsibility, and corporate behavior (Emiliani, 2001). The symmetry of these and other factors begin to build the corporate reputation that can either help or hinder investment analysis.

Corporate reputation. In recent years, a corporation's reputation has been considered an economic asset (Siano, Kitchen, & Giovanna Confetto, 2010). Corporate reputation can be defined as the following:

...the result of a shared judgment socially expressed (degree of respect and credibility) by stakeholders, which is based on the actions of the firm and on its ability to satisfy expectations and create value for stakeholders (customers, investors, employees, suppliers, partners, etc.). (Siano et al., 2010, p. 69)

Furthermore, a good reputation relies on achieving alignment between an organization's goals and values, its conduct and actions, and the expectations and experience of its stakeholders (Gaultier-Gaillard & Louisot, 2006). It is considered an intangible asset that can directly affect the market value of the firm and, at its core, is the element of trust that has a considerable impact on any transaction (Gaultier-Gaillard & Louisot, 2006).

Significant research has highlighted that the sharing of mutual information is pivotal to a trusting relationship (Laequddin, Sahay, Sahay, & Abdul, 2012). While the quantity of information should be extensive, the quality of information is essential (Goodman & Dion, 2001) for the relationship to be symbiotic. Additionally, a trusting action is triggered when risk taking is involved, indicating a requirement of vulnerability (Laequddin et al., 2012). However, trust

cannot be one dimension but rather each party must take a measured assessment of the potential partner and work to reduce the assumed risk below a bearable threshold in order to establish a healthy relationship (Laequddin et al., 2012). In light of the above information, trust is a key component for any investment information, but especially those with socially responsible or biblically based influences. An understanding of the importance of trust is a foundational concept that must be present within the relationship between all parties involved: client, investment manager, and corporation. Trust that the corporation fully supports the acclaimed corporate socially responsible initiatives. Trust that the advisor is employing the investment approach that aligns with the preferred moral objectives of the investor. Trust that the client is aware and fully disclosing their risk tolerance in light of their core beliefs.

Corporate social responsibility. Corporate social responsibility (CSR) has had many definitions and implied nuances. Provided below is the assumed definition for this research project:

A concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with stakeholders on a voluntary basis. It is about enterprises deciding to go beyond the minimum legal requirements and obligations stemming from collective agreements in order to address societal needs. (Smith & Rönnegard, 2016, p. 463)

Shareholder primacy norm (SPN) is the legal fiduciary duty of a manager that requires decisions to be made by the managers and company directors on behalf of the corporation to further the interests of shareholders (Smith & Rönnegard, 2016). Many believe that SPN hinders managers from considering the interests of other stakeholders outside of shareholders and consider it an obstacle to CSR initiatives (Smith & Rönnegard, 2016). However, some authors

would argue that because a business is not an individual, it has no moral obligations; therefore, managers who give profits away for a good cause are indulging in their own charitable inclinations at the expense of the firm's owners (Smith & Rönnegard, 2016).

Regardless, increases in firm CSR efforts continues to be on the rise as companies allocate a significant portion of their expenses to CSR-related activities. Research associates the adoption of CSR efforts by corporations to "shareholder activism" (Sparkes & Cowton, 2004, pp. 50-51) as shareholder groups exercise their unique rights to facilitate change. The 2016 Sustainable and Responsible Investing report indicated that SRI assets had increased by 33% since the beginning of 2014 to a total of \$8.72 trillion with the share of professionally managed assets comprising between 22 to 38 percent of the market in the United States and Canada (Global Sustainable Investment Alliance, 2016). Ethics and philanthropy are valued as two essential dynamics that help round out the socially responsible expectations that are placed on modern organizations pursuing a competitive, dynamic, global marketplace (Carroll, 2015). There are two goals of CSR: protecting and improving (Carroll, 2015). Protecting society involves companies avoiding their negative impacts such as pollution discrimination, and unsafe products, whereas improving the welfare of society asserts the need for companies to create a positive benefit for society such as philanthropy, community, and relations (Carroll, 2015). This idea of protecting and improving society is being adopted as a foundational belief of many investors. In turn, new investment vehicles, known as socially responsible funds, have grown in popularity as asset managers have prioritized the evaluation of CSR initiatives employed by a corporation.

Definition, history, criticisms, types of SRI funds, and screening techniques. As socially responsible investing gains in popularity, numerous explanations to define this

phenomenon have been offered. It seems appropriate to begin this in-depth discussion with clarification of the term, as supported by scholars. The historical influences of this movement are revealed with common criticisms provided. The three main types of socially responsible investing are explored, which includes religious based (or faith based) investing. Unfortunately, literature specific to faith-based investing (or BRI) is minimal. Thus, the examination of the broader set of literature specific to socially responsible investing was undertaken, with an emphasis on research that targeted faith based investment vehicles. Finally, as the screening process creates these unique investment vehicles, the applied techniques are discussed.

Socially responsible funds defined. Cheah, Jamali, Johnson, and Sung (2011) defined socially responsible investing as “the philosophy and practice of making strategic investment decisions by integrating financial and non-financial considerations, including personal values, societal demands, environmental concerns, and corporate governance issues” (p. 305). From this definition, there are three main pillars of socially responsible investing: (a) investor funds should be invested wisely, (b) an investor’s personal beliefs should align with his investments, and (c) the investment decision’s effect on society should be taken into consideration (Cheah et al., 2011; Junkus & Berry, 2015). To incorporate these core values, SRI funds are screened from both a positive and negative position to consider ethical and social principles represented by the investments, as well as, the return on the investment. Screening techniques were more thoroughly discussed in a later section while the following discussion exposed the historical spiritual and secular influences that promote these qualitative investment considerations.

History of socially responsible funds. The consideration of using resources to grow financially while bettering society dates back to Talmudic and Biblical times. Rowling (2012) highlighted that the safeguarding of money and the diversification of investments (e.g., land,

savings, and merchandise) were encouraged by the Babylonian Talmud. Further, consider the account of Jacob and his deliberate action to divide his assets between two different camps in the event of one camp's fatality (see Genesis 32:7-9). Additionally, in Luke 14:28-30, Jesus provided a warning to consider the cost of building a tower prior to starting construction – a caution that required both quantitative and qualitative deliberation. These discussions continued to resound with religious bodies who would later formalize teaching about socially responsible investing. Following the discussion of these concepts by the Catholic Church in the mid-1200s (Wishloff, 2009), other Protestant denominations (i.e., Methodists and Quakers) in the 1700s began to weed out investments that were not aligned with biblical teachings by developing investment principles that dictated screening standards (Schueth, 2003).

While religious practices and teaching established the foundation for the modern socially responsible investing movement, other significant events influenced the growth and acceptance of socially responsible investing. By the 1950s, social responsibility had gained momentum in penetrating academic literature (Marens, 2008). However, the events throughout the 1960s and 1970s that proved the most influential were the civil rights movement, anti-war protests, peace marches, and gender equality activities (Glac, 2014). Thus, the aforementioned events in the 1960s and 1970s spurred the movement forward (Marens, 2008). Adding fuel to the fire, the following decades marred by the putrescence of corporate morality reduced leaders to questioning their profit-only approach to investing (Abdelsalam, Fethi, Matallín, & Tortosa-Ausina, 2014).

Contrary to the spiritual dynamic of the SRI movement, the secular segment was more focused on the environmental awareness, corporate transparency, and gender equality causes (Welker & Wood, 2011). While this represented a shift in the mindset from spiritual to more

social aspects, the impact on non-religious investors was still significant as the awareness of cultural implications of investment decisions encouraged further investigation of socially responsible investing. The concept of investing in companies in support of a specific cause generated a movement to transform the existing investing culture (Welker & Wood, 2011).

This new culture, marketed to a broad group of consumers and organizations, included the following: SRI options (including direct investments and socially responsible mutual funds), increased accountability, heightened social awareness, and increased spiritual sensitivity (Cheah et al., 2011). Socially responsible mutual funds are one of the main instruments of SRI as “fund” is used to refer to “ready-made financial product where investors’ money is pooled into a portfolio and a fund manager decides which shares to buy” (García-Melón, Pérez-Gladish, Gómez-Navarro, & Mendez-Rodriguez, 2016, p. 476). While versions of SRI funds had existed in the 1970s, these funds were often designed for religious organizations and not typically offered to the general public (Schwartz, 2003). Further, SRI funds often include corporations, religious groups, and individuals rather than simply the government-funded programs (Bustamante, 2015). As the momentum for these funds has continued to increase each year, literature and research has consequently expanded to criticize socially responsible investing.

General criticisms of socially responsible investing. There are four main criticisms that arise from SRI discussions. The first issue is defining what constitutes being socially responsible (Junkus & Berry, 2015). This concept considers if social responsibility requires following the law to the letter or following the spirit of the law (Junkus & Berry, 2015). It further considers what items should be included in the criteria for determining social responsibility, and if a company is considered socially responsible if it follows a set of standards for most of its actions but fails to meet them in other areas (Junkus & Berry, 2015).

The second issue is related to the true impact of shareholder activism. This consideration proposes two paths for an investor that is dissatisfied with the actions of the company's leaders: a) divest their ownership of company shares and invest elsewhere, or b) reveal their concerns to the leaders of the organization (Goodman, Louche, van Cranenburgh, & Arenas, 2014). While the second option garners the most attention from those encouraging shareholder activism, either action has the ability to influence corporate decisions (Goodman et al., 2014). However, the main deliberation is if actions by investors truly impact the decisions of organizational leaders in a positive way. Those in support of shareholder activism strongly assert that direction of a publically traded company can effectively be influenced by increased involvement (Adegbite, Amaeshi, & Amao, 2012).

The third criticism presented concerns the true motivation of business leaders to do well. Lin-Healy and Small (2013) concluded that prosocial or benevolent behavior by businesses is "rarely, if ever, purely selfless" (p. 696). In essence, even if engaging in a socially responsible activity, the business leader is often doing so in anticipation of a reward from investors or customers. Revelli (2017) asserted that companies put forth their good CSR practices to achieve an appealing rating by social rating agencies to use as a tool to generate profit for its shareholders (van Beurden & Gossling, 2008). This motivation conflict can be further evidenced in the projection of a socially responsible image while the business is conducted in such a way that is contrary to the conjured image. The façade of concern is deemed necessary to either placate investor concerns or attract socially responsible customers (Amazeen, 2011).

The final criticism associated with socially responsible investments is the potential profit sharing consequences. Nobel Prize winner Friedman (1970) stated that the goal of a profit-centered business is "to use its resources and engage in activities designed to increase in profits"

(para. 33). Rather than focusing on the social goals of owners and managers, businesses should only focus on legally earning a profit (Wishloff, 2009). This supports the idea of business owners working to maximize the profitability of their organizations to create the most profit so that then each individual investor can use his share of those profits to accomplish his personal objectives.

Given the nature of these socially responsible investments, the above criticisms should be evaluated before further investment is considered. However, research reveals that this type of investment largely attracts passive investors with medium-low financial knowledge with the willingness to invest in readily available financial products without additional consideration outside of the risk assumption (García-Melón et al., 2016). The intent of this research is to provide a holistic review of these type of funds in order to more fully understand the developing discussions that may affect investment. While no project can fully address each of these concerns, provided information is intended to serve as a catalyst for additional research and/or further investment deliberations.

Types of socially responsible funds. SRI funds are not identical. Rather, investors may choose from several different types. The following are the three largest categories of socially responsible funds: (a) environmental funds, (b) ethics-based funds, and (c) religious-based funds (Ito, Managi, & Matsuda, 2013). While each fund will use a different set of corporate investment criteria, the basic fund methodology is the same. As such, professional fund managers are utilized for screening purposes (Viviers & Eccles, 2012). Each type of SRI fund was briefly reviewed in an effort to continue to build the knowledge base of information regarding these type of investments.

Environmental funds. Companies that have proven environmentally friendly operations and investments are grouped into environmental investment funds or “green funds” (Mallett & Michelson, 2010, p. 395) Environmental issues include that of climate change, clean water, pollution, and deforestation (Muñoz, Vargas, & Marco, 2014) with climate change being considered the greatest environmental issue facing the global economy (Climent & Soriano, 2011). Managers of funds will apply determined screening techniques to companies to consider if their actions meet a threshold for investment. The activities of the company are closely reviewed to consider if such actions are contributing to the assumed causes of climate change (Sievänen, Rita, & Scholtens, 2013). For example, companies such as timbering or coal mining are often excluded from these type of funds because of their failure to meet the screening criteria (Muñoz et al., 2014).

Ethics-based funds. Corporate citizenship is a key factor in considering inclusion in funds of ethics-based causes. As such, corporate social responsibility is a large element of ethics-based funds (Amazeen, 2011) as it includes employee treatment, corporate transparency, and pay disparity (Chasan & Murphy, 2015). Historically, corporate social responsibility ratings and managerial actions did not significantly influence the investment of companies based on corporate social responsibility (Cabello, Ruiz, Pérez-Gladish, & Méndez-Rodríguez, 2014). However, the financial crisis in the late 2000s that involved unethical behavior by corporate giants such as Enron, Global Crossing, and Lehman Brothers drove consumers to seek investments in companies that demonstrated more positive corporate social responsibility efforts (Cabello et al., 2014). As companies continue to evidence higher corporate social responsibility ratings, the likelihood of their inclusion in ethics-based funds increases (Malik, 2015).

Religious based funds. The third largest category of SRI funds is religious-based funds – those that attempt to reflect specific religious beliefs. Christianity, Judaism, and Islam are the three largest religions represented by religious-based mutual funds in the United States (Ferruz, Muñoz, & Vargas, 2012). As the term Christian is considered to be rather broad, all faiths associated with one or more Christian groups (i.e., Catholic, Evangelical, and Protestant) is included under the umbrella of Christianity. Companies producing goods and services that meet certain behavioral criteria are included in the Christian-based funds while those failing to consistently follow the teachings of Christianity are excluded (Hood, Nofsinger, & Varma, 2014).

Judaism varies somewhat in that the Jewish investment practices emphasize the concept of asset diversification that follows a “1/3, 1/3, 1/3 recommendation” (Newfeld, 2014). In essence, the following three areas should have one-third of the investor’s assets: (a) land, (b) businesses, and (c) cash on hand or cash equivalents (Rowling, 2012). In following this guidance, a Jewish investor would invest approximately two-thirds of his or her money in real-estate trusts (REITs) and stocks (Newfeld, 2014). Thus, the remaining third of investible assets would be in cash or cash equivalents such as bonds, savings accounts, or certificates of deposit (Rowling, 2012).

Finally, Islamic-based funds are careful to only invest in companies that do not violate the teachings of Islam by using specific screening techniques. For example, companies in financial markets and those that produce or sell pork are often investments that are generally avoided by Islamic-based funds (Clarke, 2015). Islamic-based funds have only been in existence since 1994, but have since grown to more than 800 funds with those funds containing over \$1 trillion in net assets (Abdelsalam et al., 2014). While they see consistent growth year over year,

the Islamic-based funds are more prevalent outside of the United States (Abdelsalam et al., 2014).

Historically, SRI funds in many European, North-American, and Asia-Pacific countries were outperformed by domestic benchmark portfolios (Renneboog, Ter Horst, & Zhang, 2008). Specifically, the average risk-adjusted returns were -2.2% to -6.5% per annum for SRI funds in Belgium, Canada, France, Ireland, Japan, Malaysia, the Netherlands, Singapore, Sweden, the UK and the US (Renneboog et al., 2008). However, when the alphas of conventional counterparts are compared to those SRI funds, there was no statistically significant evidence that the SRI funds underperformed their conventional counterparts in most countries, which is to say that the alphas were not statistically (Calvo, Ivorra, & Liern, 2015) different from zero (Renneboog et al., 2008). Such findings warrant further investigation into the nuances of variables that impact the return of these screened funds.

Screening techniques. SRI funds are often structured like traditional mutual funds and, more recently, ETFs as they are comprised of the stock of companies that meet a certain set of investment criteria. However, unlike traditional mutual funds or ETFs, the ideals of the individual investors guide their resource allocation into socially responsible funds that are perceived to reflect core beliefs (Fitzpatrick et al., 2012). In doing so, social goals of the investor are included in the investment decision-making process (Ooi & Lajbcygier, 2013). The investment methodology used in this situation is that of excluding companies considered attractive from an investor's portfolio because of their judged social irresponsibility while including securities from companies otherwise considered unattractive because of socially commendable behavior (Langbein & Posner, 1980; Richey, 2017). However, this screening process should not only result in one potential portfolio, but should instead yield several

alternative portfolios including the incorporation of socially responsible investments while maintaining acceptable levels for the risk and the expected return for the client (Calvo et al., 2015). Further, research continues to indicate that return does not need to be reduced in order to see an appreciable degree of SRI (Calvo et al., 2015).

Early on, religious groups developed the first screening process by determining criteria to avoid funding undesirable behaviors with church money. One of the first initial behaviors flagged by church investors was participation in the slave trade (Schueth, 2003) which later expanded to military or war-related products, tobacco, and alcohol. Rather than converting the SRI criteria into a mutual fund, the investment advisors would tailor portfolios of clients to meet unique screening needs (Schueth, 2003). However, these early screening ideas shaped the most modern SRI funds that utilize at least one of the following techniques: (a) screening, (b) shareholder advocacy, and (c) community investing (Schueth, 2003).

To ensure the companies selected for investment meet the criteria of the client's portfolio, screening has proven to be a useful tool (Viviers & Eccles, 2012). Shareholder advocacy then affirms that identified companies are conducting themselves in a manner acceptable by investors (Clinebell, 2013). Finally, the reinvestment of business funds into the lives of employees and the surrounding community has proven to be a significant consideration for many modern SRI funds (Escrig-Olmedo, Muñoz-Torres, & Fernandez-Izquierdo, 2013).

According to Beer et al. (2014), there are two basic screening methods used by fund managers: (a) positive screening and (b) negative screening (García-Melón et al., 2016). While positive screening selects firms that meet a certain set of requirements (a 'best in class' approach), negative screening excludes companies from investments due to products or services (e.g., alcohol, tobacco, nuclear power, gambling, etc.; Bilbao-Terol, Arenas-Parra, Cañal-

Fernández, & Bilbao-Terol, 2016). Combining both the negative and positive screen results in a third generation of SRI with a most recent fourth category of screening emerging (Bilbao-Terol et al., 2016). This last evolution of screening promotes shareholder advocacy with the investor acquiring shares in companies that would have been rejected during the negative screening phase. While the disadvantage is the sizeable time and capital commitment, advantages of this strategy include the benefit to the investor from the appreciated company stock price and dividends with the changing company strategy (Bilbao-Terol et al., 2016).

Again, there are a few criticisms regarding these type of screenings as authors argue an opportunity cost is associated with implementing screening procedures (Trinks & Scholtens, 2017). Some researchers postulate that the overall performance of funds is negatively affected when such screens are implemented (Sánchez & Sotorrío, 2014; Trinks & Scholtens, 2017). Furthermore, ratios and fund sizes of those screened are significantly different than funds that do not use screen filters. For example, the average expense ratio for funds that were either positively or negatively screened were close to 20% higher than unscreened funds (Sánchez & Sotorrío, 2014).

Current research on the performance of SRI/BRI portfolios. According to Huang (Huang), an SRI strategy is utilized for one out of every six dollars managed professionally in the US. Furthermore, assets invested using SRI strategies have seen a 76% jump in the past two years with over \$7 trillion assets invested using SRI strategies (Huang, 2016). While early research examining the period from 1987-1994 indicated no statistical difference between the average returns of socially screened and unscreened investments (Guerard, 1997), more recent research indicates that insignificant abnormal returns for SRI in both the US and European stock market support the assertion that SRI stocks are correctly priced by market participants (Mollet

& Ziegler, 2014). However, authors would still argue that SRI investors must be willing to pay a price for ethics or social responsibility. Because of their aversion to unethical corporate behavior, it seems that more investors are willing to realize a slightly lower return on investment to appease their moral conscience (Junkus & Berry, 2015). On the other hand, the growing number of investments in SRI would suggest that either more investors are accepting the lower return realization or these socially responsible investments are performing better than expected. Thus, the ensuing discussion provides contrasting scholarly literature regarding the efficacy of the socially responsible and BRI portfolios.

Favorable results. Bilbao-Terol, Álvarez-Otero, Bilbao-Terol, and Cañal-Fernández (2017) found that the SRI label on mutual funds was valued favorably by the market with the implicit requirement for a committee to permanently ensure socially responsible behavior of companies in which socially responsible investors invest. Their research was focused on the French market with 293 mutual funds domiciled in France chosen, 67 of which were marketed as SRI. The non-SRI funds were used as the conventional funds to compare performance to the SRI funds. Causal inference was proven between the SRI label and the market value of the mutual funds. Further, while socially responsible mutual funds are still smaller than conventional ones, they have experienced higher growth in assets than their conventional counterparts (Bilbao-Terol et al., 2017).

Using the Carhart four-factor model and Fama-Macbeth regression estimates, Cai (2014) examined 20 years' data from 1992-2011 to find that environmentally responsible companies outperform their benchmarks in the fourth to seventh year after being screened. Further, an annual four-factor alpha of 4.06% was earned by an equally weighted environmentally responsible portfolio in the fourth year which was 3.00% above industry benchmarks, and 3.87%

above characteristic benchmarks. As such, based on their findings, the authors concluded that environmental responsible companies are undervalued on the short horizon, a reaction that is corrected on the long horizon. For a variety of reasons, the long-term excessive returns are not permanent, they were found to persist for at least four years. Implications of such findings indicate the impact of corporate environmental responsibility on firm value and the equity market inefficiency in incorporating intangibles (e.g., good environmental reputation; Cai, 2014).

Gil-Bazo (2010) utilized the Center for Research in Securities Prices Survivorship-Bias Free US Mutual Fund Database (CRSP Database) to evaluate the returns of socially responsible mutual funds from December 1994 to December 2005. The authors did not differentiate between the various socially responsible mutual funds but rather utilized all funds earmarked as socially responsible in the database. The outlier funds were then categorized as “conventional funds” and used as a benchmark for the socially responsible mutual funds (Gil-Bazo, 2010). The key statistics applied were as follows: expense ratio, age of funds, net assets, turnover rate, total expense load percentage, and gross returns (Gil-Bazo, 2010). A statistically significant difference between the two groups of funds was found as socially responsible mutual funds managed by companies that specialize in those types of funds outperformed the conventional funds, resulting in the recommendation to hire the appropriate company to manage specific mutual funds (Gil-Bazo, 2010).

Ito et al. (2013) performed a similar analysis but created a third category of environmentally friendly mutual funds to provide three classes of funds to examine. Again, the results revealed a statistical significance in the performance of socially responsible funds (as a whole) as opposed to conventional funds, with further evidence that revealed the underperformance of environmentally friendly mutual funds to both the other two fund classes

(Ito et al., 2013). The authors concluded that socially responsible funds had the capacity to perform better than their benchmarks and were potentially hindered in this study from additional significant performance because of the inclusion of environmentally friendly funds (Ito et al., 2013).

Favorable: Crisis-period. Nofsinger and Varma (2014) found that conventional funds outperformed SRI funds during a non-crisis period by an annualized 0.67%-0.95%, depending on the factor model used. On the other hand, SRI funds outperformed conventional funds by 1.61-1.70% during crisis periods (Nofsinger & Varma, 2014). Additionally, this study concluded that the outperformance in crisis periods was driven by mutual funds that focused on environmental, social, and governance (ESG) issues and shareholder advocacy, highlighting more positive screens rather than negative screens that focused on faith and religious principles (Nofsinger & Varma, 2014). Muñoz et al. (2014) also discovered that socially responsible mutual funds performed similar (i.e., no statistically significant difference) to their benchmarks during crisis periods while underperforming their benchmarks during non-crisis times. Similarly, Ortas, Moneva, Burritt, and Tingey-Holyoak (2013) examined the performance of SRI funds in the Spanish market, as compared to conventional investments. Findings indicated that SRI strategies are less risky than the conventional investment approach, especially during periods of maximum market instability, the beginning of the financial downturn (Ortas et al., 2013). As such, systematic evidence is provided to support the assertion that investing in the SRI in the Spanish context provides lower levels of risk and greater adaptive resilience. This allows an investor to apply a buy and hold strategy of an SRI fund that would both satisfy personal convictions while obtaining lower exposure to risk levels in his investment decision (Ortas et al., 2013).

Favorable: Religious mutual funds. Peifer (2011) defined religious mutual funds as a “fund that self-avows an institutional religious identity (p. 238). The author further classifies religious groups in the USA that are represented by mutual funds as Catholic, non-denominational Christian, Muslim, and other Christian denominations. Four resulting categories were determined and examined in the study – religious SRI funds, religious non-SRI funds, secular SRI funds, and conventional funds. Research findings revealed that religious SRI funds are less responsive to lagged performance and experience less fund flow volatility than secular SRI funds. Further, as religious non-SRI assets are less stable than religious SRI assets, high levels of asset stability in religious SRI funds are directly associated with the moral attributes of socially responsible fund activity (screening and advocacy). The author postulates that the asset stability seems to be a consequence of thoughtful moral action, confirming that investment perseverance is a byproduct of morality among religious SRI investors (Peifer, 2011).

Unfavorable results. Climent and Soriano (2011) selected socially responsible funds from the CRSP Database, including those that were environmentally focused, and then divided the data between funds focused on environmental issues and all other types of socially responsible investments (i.e., religious, ethical, governance, etc.). The authors utilized three sets of comparisons of the mutual funds: (a) environmental to socially responsible, (b) environmental to conventional, and (c) socially responsible to conventional. There were significant statistical differences between all categories with environmental underperforming both socially responsible and conventional funds and socially responsible funds underperforming conventional funds (Climent & Soriano, 2011). While the sample size of this research was relatively small (i.e., 21 total funds), the use of environmentally focused or socially responsible mutual funds was discouraged.

Utilizing an international approach, Cortez, Silva, and Areal (2012) examined the returns of internationally focused socially responsible mutual funds in the United States and Europe by using a specific methodology to select a total of 46 socially responsible mutual funds for the study (seven from the United States and 39 funds from Europe). The European funds were further divided between different countries: the United Kingdom, Belgium, France, Germany, Italy, Austria, and the Netherlands. The result of the study revealed that internationally focused socially responsible mutual funds in the United States underperformed not only their peers in Europe, but also their benchmark index (Cortez et al., 2012). However, their conclusion also revealed that European global socially responsible mutual funds did not underperform their benchmark index – an indication considered by the authors as evidence that negative screening employed by most US-based global socially responsible mutual funds contributed to the poor performance of the funds.

Mixed results. Researchers capitalized on the volatility of the market between January 2008 through March 2010 by examining the performance of socially responsible mutual funds during this brief period (Branch, Ma, Shafa, & Shaw, 2014). As the purpose of this study was to determine how well socially responsible mutual funds performed during periods of extreme economic uncertainty, a portfolio of mutual funds labeled as socially conscious by Morningstar was compared to the control portfolio created by the researchers. Mutual funds with similar investment strategies and similar variables (e.g., total assets, expenses ratios, age, and turnover percentage) comprised the control portfolio. Furthermore, the socially responsible ETF was compared to the Center for Research in Securities Prices market index (CRSP market index), thus effectively creating a multi-dimensional testing opportunity to identify potential errors in the creation of the control and socially responsible portfolios (Branch et al., 2014). The results were

unique in that the socially responsible portfolio performed statistically significantly lower than the control portfolio yet also performed statistically significantly higher than that of the index (Branch et al., 2014). While the reasons are not explicit, conjecture suggests that the results may have varied if the study period had been longer than 27 months.

Again, the 2008 period was utilized for research purposes as authors Chang (2010) examined the performance of 184 socially responsible mutual funds to their benchmark averages over the 3-, 5-, 10-, and 15-year periods. Mixed results were achieved as the socially responsible mutual funds underperformed their benchmark averages during the reviewed period (Chang, 2010). However, the expense ratios, annual turnover rates, and tax cost ratios for the socially responsible mutual funds were much lower than their benchmarks with other unique findings highlighting the inconsistent results. Ultimately, the study results lead the authors to conclude that there were no fixed or homogenous cost associated with socially responsible investing (Chang, 2010).

Results with no difference for all socially responsible mutual funds. Humphrey and Tan (2014) took a different approach than most other researchers as they created socially responsible portfolios that would reflect the larger equities market if certain types of screens were employed to either include (i.e., positive screening) or exclude (i.e., negative screening) the stocks of individual companies. Four portfolios were created that were considered to mirror the current body of all socially responsible mutual funds with two portfolios created through negative screening and two portfolios established through positive screening. A comparison of the screened portfolios to the returns of the unscreened portfolios was performed with the use of t-tests to determine if differences between the groups of funds existed. No significant difference between the earnings of the created portfolios and their benchmarks were identified, leading the

researchers to conclude that “a typical socially responsible fund will neither gain nor lose from screening its portfolio” (Humphrey & Tan, 2014, p. 375). To some degree, this can serve as affirmation to investors that socially responsible investments can provide equivalent returns to mutual funds without socially responsible objectives (Humphrey & Tan, 2014).

The Brazilian mutual fund market is the fourth largest mutual fund market in the world and considered a key source for additional information as to how socially responsible mutual funds perform (Hartz Pinto, Funcia Lemme, & Pereira Câmara Leal, 2014). At the time of the study, there were only 11 mutual funds that had a SRI objective. As such, the analysis was performed over these specific funds with no separation based on fund type (e.g., large cap, small cap, etc.). All funds were included in a single group with their performance compared to two major indices of Brazilian stock returns. The findings revealed that the socially responsible mutual funds and the benchmark indices were similar with no difference and returns normally distributed for both. Furthermore, net returns of the socially responsible mutual funds were not statistically different from their benchmark returns which lead the authors to conclude that socially responsible mutual funds in the Brazilian market were not different than those of the larger market of mutual funds (Hartz Pinto et al., 2014).

Direct contrasts - Investments in sin stocks. As the above research has highlighted the performance of socially responsible funds as compared to various portfolios, Lobe and Walkshäusl (2016) took another approach by creating a set of global, regional, and domestic portfolios consisting of a large number of stocks that would be considered a sextet of sin: adult entertainment, alcohol, gambling, nuclear power, tobacco, and weapons. Focusing on passive investments (indices and portfolios), the authors constructed their own synthetic portfolio to incorporate recently available global data. Fourteen sin portfolios for the sample period 1995-

2007, were built by excluding criteria of socially responsible investors and employing a disapproval vote that was the reverse of approval voting. Their annualized mean returns and standard deviations, along with a geographically matched market benchmark and annualized Sharpe ratio provided evidence of the risk-adjusted performance. Results indicated that at the global, regional, and country level, sin portfolios do not offer an abnormal performance in comparison to well-known stock return factors, indicating their outperformance in the US was special to the 1960s and 1970s (Lobe & Walkshäusl, 2016).

On the other hand, Richey (2017) used daily stock return data from the Center for Research in Securities Prices from 1987-2016 to examine the return performance of a portfolio of seventy corporations from vice-related industries. As “sin” is subjective, the author started with the “triumvirate of sin” employed by Hong and Kacperczyk (2009) which focuses on tobacco, alcohol, and gambling stocks and also added defense firms, adult entertainment firms, and payday lenders to complete his portfolio of vice stocks. Richey (2017) sought to build on previous research that suggested vice stocks are neglected and therefore underpriced due to socially responsible investing awareness that influences institutional investors (Hong & Kacperczyk, 2009). Using data from 1965 to 2004, Hong and Kacperczyk (2009) found that sin stocks outperformed their benchmarks by up to 30 basis points per day. Employing Jensen’s α , the Fama-French Three Factor Model, the Carhart Four-Factor Model and the newly-release Fama-French Five-Factor Model, Richey (2017) examined the daily mean return of the portfolio comprised of 70 firms. The results yielded a positive and significant α in the CAPM, three-factor and Carhart models, which indicated an abnormal return after controlling for size factor, book-to-market factor, momentum factor, and systematic risk (Richey, 2017). The author concludes by suggesting vice stocks provide higher returns because they are more profitable and

employ strict (conservative) capital budgeting techniques than typical corporations (Richey, 2017).

The above study supports the conclusion of Soler-Domínguez and Matallín-Sáez (Soler-Domínguez & Matallín-Sáez) who found that the VICEX fund, a non-SRI investment that invests in companies whose reputation has been morally comprised, outperforms the market and provides higher return premiums than a more reputable socially responsible mutual fund during the 2009-2013 boom or bull market. However, in the bear market during the 2008-2009 crisis, the VICEX fund had a negative performance (Soler-Domínguez & Matallín-Sáez, 2016). The authors suggest that their findings imply a link between performance of funds and economic resilience.

Other considerations. As each investment fund must be managed, additional research was performed to consider other variables that could have a significant effect on the performance of the SRI funds. These considerations may prove significant when considering the conceptual framework and model utilized in subsequent research going forward.

SR money flows. Renneboog, Ter Horst, and Zhang (2011) found that socially responsible (Israeli, Lee, & Sridharan) money flows are minimally related to past fund returns, yet the kind of SR investment strategy implemented plays an important role in the relationship. As a result, an inference can be made that conventional fund flows are more sensitive to negative returns, especially compared to SR funds that implement a negative or sin/ethical screen. The opposite is true for environmental screens as they are more sensitive to past positive returns than are conventional fund flows (Renneboog et al., 2011).

Stability of mutual fund investors. The stability of religious mutual fund investors as compared to other kinds of investors, such as SR mutual fund investors and conventional fund

investors) were found to be the most stable (Peifer, 2011). This is to say that fund flow decisions made by the religious investors were minimally affected by past financial return (Peifer, 2011). Consistent with the finding of Renneboog et al. (2011), Peifer (2011) who found these religious mutual funds used an SR strategy that usually implemented negative or exclusionary screens.

SR segmentation. As previously intimated, the motives for most SRI investors are largely driven by corporate unethical disgust or some type of moral conviction. However, with the continued rise in SR investments, authors have begun to dissect and delve into the psyche of SR investors. Derwall et al. (2011) divided these investors into the following two segments according to SR strategy implemented by the fund in which they invest: values-driven and profit-seeking. The authors argue that negative and exclusionary screens (i.e., excluding stock issued by companies that are morally deplorable such as tobacco, alcohol, and gambling sectors) are utilized by values-driven investors; whereas, positive screens that target stocks with good records on environmental, social and/or governance issues attract the profit-seeking investors (Derwall et al., 2011). Their conclusion emphasized that different views of SRI are complementary and that varied segmentation based diverse variables would further the examination of whether values affect asset prices.

Cash flow timing. The timing of cash flow has been the topic of recent research as return-chasing behavior has been associated with lower average returns. Friesen and Sapp (Friesen & Sapp) found that an investor's timing ability was at its worst with increased fund load fees, turnover ratio, and length of return history. Essentially, especially bad cash flow timing skills are evident in investors in older and more expensive funds (Friesen & Sapp, 2007). Ultimately, the authors realized that investors that continue to withdraw from funds with returns well below the mean and purchase funds with returns high above the mean will lose, on average, because of

the consistent nature of returns to cluster at the mean (Friesen & Sapp, 2007). This evidence reveals that limiting capital outflow is in the best interest of investors as more stringent restrictions on redemptions reduce negative effects on returns realized by investors.

In light of the performance of conventional mutual funds, research considering the cash flow timing skills of SR mutual funds have also been considered. Muñoz (2016) found arrived at the following two conclusions:

SR mutual fund investors and conventional fund investors show different cash flow timing skills; and among SR mutual fund investors, investor timing skills vary according to the type of strategy implemented by the SR fund. Green fund investors (our proxy for investors with profit-seeking profile) show worse timing skills, while values-driven investors (our proxy for this is religious fund investors) make better cash flow timing decisions. (Muñoz, 2016, p. 121)

Furthermore, sophisticated investors (defined as those who invest in funds with lower expense ratios, fee levels below the average, no load funds, institutional funds and funds with lower mean turnover ratios) have better results than unsophisticated ones (Muñoz, 2016). From these results, a variety of inferences can be made as to the performance of funds based on cash flow timing – the implications perhaps influencing skeptical investors.

Characteristics, benefits, and criticisms of ETFs. As the demand for SRI opportunities continues to grow, asset managers are applying the above screening techniques to other types of investment vehicles. Socially responsible mutual funds were some of the first crafted, offering the greatest number of related scholarly literature to reference. ETFs, however, are a relatively new investment opportunity with even fewer funds classified as socially responsible. Below is a

discussion of the characteristics of ETFs, perceived benefits, and proposed criticisms of this specific investment vehicle.

Characteristics of ETFs. By the end of 2016, more than 30% of overall trading volume and more than 10% of the total market capitalization traded on US exchanges were ETFs (Ben-David et al., 2017). By the end of September 2017, ETFs under management globally were \$4.3 trillion in roughly 6,300 investment vehicles (BlackRock, 2017). While ETFs are similar to mutual funds in that the market value is close to their net asset value (García-Melón et al., 2016), they are different in that they are considered a “basket of securities that trade on exchanges like individual stocks” (Huang & Lin, 2011, p. 336). While mutual funds interact with the capital market directly, ETFs trade on a secondary market with “Authorized Participants,” typically large financial institutions or more specialized market makers, who in turn interact with the market (Dorocáková, 2017; Lettau & Madhavan, 2018). A reduction in trading costs occurs as the secondary market trading does not lead to transactions in underlying securities when investors redeem from the fund (Lettau & Madhavan, 2018). This reduction in secondary trades by fund managers minimizes transaction costs and may even eliminate taxable events (Bidisha et al., 2017). Further, recent research reveals US ETFs to be the most price efficient as they experience minimum deviations between price and NAV during the studied period from April 1, 2000 to March 31, 2012 (Tripathi & Garg, 2016).

Also related to ETFs are two types of asset managers: passive and active. Passive managers build a portfolio with the goal of replicating the performance of an index, such as the S&P 500 while active managers participate in stock-picking securities and market timing, in an attempt to generate an absolute return by beating the benchmark (Ben-David et al., 2017). To determine if portfolio changes should be occur, a passive manager passively following the

prescribed benchmarks while an active manager employs a rules-based strategy (Schizas, 2014). Active and passive managers measure performance differently as those actively investing gauge their success by absolute returns or index-adjusted returns (alpha; Ben-David et al., 2017). Whereas, passive managers attempt to minimize tracking error with respect to the index (Ben-David et al., 2017). Tracking error is defined as a measure of deviation of fund's returns from benchmark's return and is also considered to be the evidence of index replication (Dorocáková, 2017). In order for an ETF to be successful, the tracking of the designated index is critical. When a one-for-one exchange occurs, it is done on a fair value basis with arbitrage helping to keep an ETF's price in line with the value of its underlying portfolio (Xu & Yin, 2017). In an effort to eliminate any tangible deviation of the ETF prices from their net asset value (García-Melón et al.), ETF issues announce their NAVs every 15 seconds on all trading days (Xu & Yin, 2017).

However, when a profitable opportunity in a deviation between ETF and index price appears, arbitrageurs will actively buy or (short) sell the ETF and pull the ETF price back to its NAV (Xu & Yin, 2017). Since the ETF position of arbitrage is risky due to future price fluctuations, arbitrageurs will take an opposition position in the constituent securities of the index. The positions are held until the price divergence between the ETF and index disappears which triggers the arbitrageurs to liquidate and reap arbitrage profits. Thus, active portfolio trading of the underlying securities of the index often accompanies ETF trading activity by an arbitrageur, impacting the price and return fluctuation of the index (Xu & Yin, 2017). The varying activity of these types of investors could impact cash flow timing and ultimately the efficacy of the fund.

Benefits. There are many reasons why ETFs are intriguing to investors – diversity of firm-specific risk at a very low cost; instantaneous purchasing and selling and the ability to do so on margin; and a variety of buy or sell orders including market orders, limit orders, and stop orders (Arugaslan & Samant, 2014; Ben-David et al., 2017; Huang & Lin, 2011). The main differences between mutual funds and ETFs are type of convenience of trading, taxation efficiency, shareholder transaction fees, and management fees (Dorocáková, 2017). In 2014, FINRA reported the average large-cap equity mutual fund charges 1.35 percent in fees while the large-cap equity ETF charges just 0.44 percent (Hougan, 2014). They are also considered far more tax-efficient than mutual funds as they make almost no capital gain distributions that are taxable to the recipient in that fiscal year (Hodaszy, 2017; Hougan, 2014). Further, ETFs are structured in such a way that allows investment gain avoidance, even when disposing of significant amounts of appreciated assets - a tax break that mutual fund investors and direct investors in securities are not allowed (Hodaszy, 2017). This is accomplished by “in-kind” exchanges by institutional investors during the normal course of operations, taking advantage of section 852(b)(6) which permits regulated investment companies (RICs) to deliver appreciated portfolio securities to redeeming shareholders without any gain recognition (Hodaszy, 2017).

Criticisms. As previously mentioned, ETFs are considered to have associated costs lower than other investment vehicles, such as mutual funds. However, some authors argue that there is an extra cost of trading and hold ETFs known as a pricing deviation – “creation and redemption of ETF units and the lack of a direct way to trade an index leave a predictable and nonzero deviation” (Defusco, Ivanov, & Karels, 2011, p. 196). This phenomenon is specific for ETFs and does not exist in index mutual funds but is in addition to the explicit transaction costs, such as brokerage and maintenance fees and bid-ask spread (Defusco et al., 2011). The authors

conclude this pricing deviation can be used to compare performance across ETFs while also being used to assess managerial performance of an ETF (Defusco et al., 2011). Further, while some investors see benefit in the instantaneous buying and selling of ETFs, other caution that the bid-ask spread can fluctuate from a penny to a dollar (Hougan, 2014). As such, an advisors timing, skill, and contacts are imperative to their ability to execute orders and prevent a mistake that could cost the client (Hougan, 2014).

Current research on the performance of ETFs. As with SRI and BRI portfolios, academic literature has varied opinions and research conclusions on the efficacy of ETFs with even less literature surrounding biblically responsible specific investment opportunities. The below discussion highlights recent studies from the multiple perspectives to provide a holistic viewpoint from various authorities. Specifically, research examining the performance of ETFs as compared to mutual funds is reviewed.

Mixed results – ETF v. S&P 500. In their study of S&P 500 Sector ETFs, the authors studied full return data for nine Sector ETFs for a three-year period from 2010-2012 with the U.S. four-week Treasury Bills used as a proxy for the risk-free rate and the S&P 500 Index utilized as the market benchmark (Arugaslan & Samant, 2014). The emphasis of this study was on the characteristics of the ETFs including the price/book ratio, price/earnings ratio, dividend yield, number of holdings, and weighted average market capitalization. The mean return was calculated by averaging the monthly returns over the three-year period with the mean excess return determined by subtracting the risk-free rate from the mean (Arugaslan & Samant, 2014).

Results from this research revealed that the ETF with the highest mean had an average monthly return of 18.59 percent as compared to the benchmark S&P 500 Index average monthly return of 10.71 percent. However, the ETF with the highest total risk, as measured by the

standard deviation of returns, had a standard deviation of 23.03 percent as compared to the benchmark S&P 500 Index of 15.09 percent. Unique to this study was the author's use of an M squared measure to identify funds that yield the highest return per unit of risk. As a result, this research concluded that a sample investment strategy utilizing ETFs earned superior returns while also bearing only an average level of risk through the strategic use of leverage (Arugaslan & Samant, 2014). Thus, it is evident through the empirical results that the ETFs that yield the highest returns may lose their attractiveness to the investors once the analysis has factored in the embedded level of risk. On the other hand, ETFs with lower returns may become more attractive once their lower risk is factored in the analysis (Arugaslan & Samant, 2014).

This research supports earlier studies that demonstrated that diversified portfolios that consist of investments in both the S&P 500 and foreign markets performed better than those that invest solely in the S&P 500, regardless of the Subprime crisis (Huang & Lin, 2011). When direct or indirect investments are used to form portfolios, conclusions imply that ETFs may offer more diversified benefits under different assumptions of return distributions than target market indices as indirect investments, especially in emerging markets that have higher Sharpe measures than direct investments (Huang & Lin, 2011). Furthermore, as diversification benefits are the same before and after the subprime crisis, an international diversified portfolio, which can be facilitated through the use of ETFs, can still provide investors with a better performance even if a market crisis happens (Huang & Lin, 2011).

No significant benefit. Studying ETF performance from 2005-2010, Bhattacharya, Loos, Meyer, and Hackethal (2017) used trading data of a large number of individual investors at a large German brokerage firm. They found that younger, wealthier investors, in terms of portfolio value and overall wealth, are the most common users of ETFs and have a shorter

relationship with the brokerage firm. Secondly, the researchers studied the raw and risk-adjusted returns of the portfolio performance with the first month of ETF use, controlling for specific variables such as demographics, year fixed effects, and lagged time-varying portfolio characteristics. They concluded that using ETFs does not increase portfolio performance, as compared to the benchmarks studied (Bhattacharya et al., 2017).

Further examination of gross returns and risk-adjusted gross returns revealed that poor ETF timing has the largest negative impact on actual portfolio returns of ETF users. The authors also concluded that following the guidelines of classical finance theory, an average investor could have benefited from using ETFs (Bhattacharya et al., 2017). Finally, once sorting the data by investors that exhibit overconfidence and sophistication, ETF timing is worse for investors who trade more, utilizing ETFs provide no groups a noticeable benefit (regardless of which measure or sort is examined) and no groups will lose by investing in the right low-cost well-diversified ETF (Bhattacharya et al., 2017). In summary, while ETFs have proven to be an important investment innovation with the potential to provide a low-cost diversification opportunity, they may not help enhance the efficiency of the individual's portfolio, even before transaction costs. The authors argue that ETFs are often actively abused as they are bought and sold at the "wrong" time or traded with the "wrong" ETFs (buying and selling ETFs that are linked to narrow indices; Bhattacharya et al., 2017, p. 1248).

Favorable ETF performance v. mutual funds. In a study of conventional mutual index funds versus ETFs, Agapova (2011) found these two investment vehicles are substitutes, but not perfect substitutes for one another. The research suggests that while tax conscious investors may prefer ETFs, conventional mutual funds are more appealing to tax-exempt investors or those who value the services of conventional mutual funds over the tax implications (Agapova, 2011). The

data and organizational structure observed indicate that the ETFs have lower fund-level fees, which the author suggests may be due to the reduction of operating costs with the elimination of individual shareholder book-keeping (Agapova, 2011). However, these cost savings may be offset by the different marginal costs associated with brokerage commissions.

Agapova (2011) studied trending aggregate data, noting the increase in investors' interest in equity mutual fund assets from 1993 to 2004 as they grew almost six times. Similarly, invested assets in ETFs grew from almost no assets to five percent of the amount invested in equity mutual funds over the same period. To test the performance of the conventional index funds and ETFs, a univariate analyses of effectiveness and tracking errors was conducted. The results indicated that ETFs are more effective in returns after fees, on average, and have smaller tracking errors. However, the authors concluded that conventional funds and ETFs are complements and substitutes in attracting investors' flow (Agapova, 2011; Schizas, 2014). While flow to conventional funds is positively related to industry flow, cash flow to ETFs are positively related to fund returns at the 5% level of significance or better (Agapova, 2011).

ETF performance during market turmoil. During several episodes of the market tumbling, ETFs garnered a significant amount of attention as prices began to deviate from the prices of the portfolios of the underlying securities (Ben-David et al., 2017). Evidence points to the concerns of market participants as they feared illiquidity and extreme volatility, resulting in an exodus of liquidity providers creating a disconnect between the returns of ETFs and the returns of underlying securities (Ben-David et al., 2017). As a result of a few faulty mechanisms, the fragility of the ETF market is of high concern for both investors and policymakers (Rennison & Hale, 2016; Wigglesworth, Bullock, & Rennison, 2016) with a

potential large-scale review of the ETF landscape by the US financial market regulator (White, 2016).

Favorable performance - CSR ETF. Bidisha et al. (2017) used the Sharpe ratio and Jensen's α from multivariate regressions to examine the performance of ETFs that hold corporate social responsibility (CSR) stocks against global, national, and regional market indexes. The risk-adjusted returns of the performance proxies were compared to the risk and return of the selected CSR-oriented ETFs, which were comprised of tradable ETFs that excluded specific sector-focused ETFs with no peers or benchmarks. The authors concluded that individuals can do "good" without missing out on returns as their research revealed CSR-oriented ETFs perform similar to their market indexes (Bidisha et al., 2017).

Five out of the 11 ETFs performed better than their corresponding market index with only one ETF in the sample showing significantly lower returns than its representative market indexes. However, the results of this study further indicated that these types of ETFs are not to be considered safe havens as they do not outperform their market indexes during economic downturns (Bidisha et al., 2017). Rather, of the five sampled ETFs that were represented (i.e., global, the USA, Canadian, and European markets), there was virtually no difference in the risk-adjusted returns between representative markets and corresponding ETFs during market downturns (Bidisha et al., 2017).

Variables in the study. The below discussion will provide an overview for the independent and dependent variables selected for this research dissertation based on the intentional design. Each variable was chosen based on the stated research question and related research hypothesis with each directly correlating with the study. These variables are further

discussed in Section 2, but are introduced below as a part of assessing the body of academic literature in regards to their inclusion in the study.

Independent variable. This research study includes a single independent variable related to the type of portfolio evaluated: faith-based equity-only investment funds, BRI equity-only ETFs, and non-screened benchmark investment funds. This follows the existing body of research that examined relative performance of socially screened portfolios, such as Soler-Domínguez and Matallín-Sáez (2016), Tripathi and Bhandari (2016), Trinks and Scholtens (2017), Capelle-Blancard and Monjon (2014), Bidisha et al. (2017), and Śliwiński and Łobza (2017). This broad classification allows for a comparative analysis between the specific portfolio types indicated above.

Dependent variables. There were several dependent variables required to address the chosen research questions. These variables are as follows: (a) return yield for both intraday and average for the period studied and (b) the risk adjusted yield utilizing the Sharpe ratio and Jensen's alpha. The below discussion will provide more insight into each variable.

Overall return yield. The first dependent variable examined was the overall intraday return yield for the types of equity-only investment funds included in the study. The yield for each fund, reported as a percentage, was calculated on a daily basis and over the study period from primary and secondary sources. The assumption that a funds ability to produce above-average returns attracts the consideration of investors is congruent with several seminal authors (Fama & French, 1992; Jensen & Meckling, 1976; Sharpe, 1964). The NAV was used to calculate the intraday and overall return yield for the period studied as this value represents the book value of the fund (Tripathi & Shukla, 2013). The NAV is calculated by subtracting debts from assets and dividing by the number of outstanding units (Tripathi & Shukla, 2013). Assets

represent the market value of the fund's investments, receivables and accrued income; whereas, debts equal liabilities and accrued expenses, which includes the portfolio management fee (Tripathi & Shukla, 2013).

Annual operating costs associated with a variety of functions are applied by the advisor running the fund. These charges are paid by the shareholders in the form of a deduction from the fund's value and are expressed as a percentage of assets under management (Chang, 2010). As this expense is cited as one of the main differentiating features between mutual funds and ETFs (Dorocáková, 2017; Lettau & Madhavan, 2018), the inclusion of this consideration is warranted and appropriately captured in using the NAV to calculate the return yield of the funds examined. Comparisons in this study are examined net of fees, facilitating a neutral comparison to be made between actively managed portfolios and theoretical benchmark indexes.

The risk-adjusted return yield. The third dependent variable in the study is the risk-adjusted yield for all studied investment funds. The Sharpe ratio and Jensen's alpha are utilized to examine this value that measures the comparative levels of systematic volatility risk as compared to the broader market (Bidisha et al., 2017; García, Ortiz, Población, & Sarto, 2013). The Sharpe ratio was utilized to measure the excess return (raw return minus the return of a comparable risk-free investment) per unit of risk, as measured by the standard deviation of raw returns (Bidisha et al., 2017). Investments with high volatility have a resulting high standard deviation just as those with low volatility are represented by low standard deviations (Shipway, 2009). Jensen's alpha allows the researcher to study the difference between an ETF's actual returns and its expected performance, given its level of risk as measure by beta, by regressing the excess return of the representative market index on the excess return of the comparable ETF

(Bidisha et al., 2017). Determining the relationship between fund performance and this beta coefficient will further clarify distinct differences between the various funds examined.

Transition and Summary of Section 1

The financial planning industry continues to grow as a new wave of socially conscious millennials, with tailored preferences, begins to invest in the market. An evolving investment mentality has been crafted to meet the demand for products that align with the moral constructs of the client. This shift has pressured those in the industry to create specialized investment vehicles that facilitate the alignment of the investor's risk, return, and principles. At the core of this mindset is the individual's conviction of the purpose of business, their evaluation of corporate reputation, and their belief in corporate social responsibility – all of which drastically influence corporate investment.

A myriad of SRI vehicles have emerged as a result of this shift. These investment portfolios undergo a screening process to include corporate securities that meet specific socially responsible related criteria and exclude those that fall short. A subset of these screened funds are religious based investment portfolios that often require a more stringent screening process in order to effectively align with the principles of a specific religious sect. BRI falls under this umbrella term to meet the needs of the biblically faithful.

The attractiveness of this opportunity continues to develop as more Christians associate this screening investment concept to the biblical principles of stewardship. The Parable of the Talents (Matthew 25:14-30), a metaphor using financial multiplication, was an exhortation to the disciples to use their God-given abilities to encourage the flourishing of humanity. This biblical concept of fiduciary stewardship extends to personal finance and investments as believers are called to “not withhold good from those who deserve it when it's in your power to help them”

(Proverbs 3:27, New Living Translation). The provision of financial resources empowers investors to provide additional resources to encourage the efforts of specific companies.

The availability of academic knowledge regarding the efficacy of these unique investment vehicles is limited, given its recent development. As such, the objective of this study is to contribute to the current body of knowledge by comparing and analyzing the effective return of BRI ETFs as compared to other equity-only faith-based funds (e.g., mutual funds) and non-socially screened equity-only investment options. Details regarding the role of the researcher, research method and design, data collection and analysis techniques, and reliability specific to this study are covered in the next section. Such discussion will provide a foundation to review the findings and implications revealed in Section 3.

Section 2: The Project

With the emersion of a new wave of investors, the demand for socially responsible and faith-based investment vehicles has never been more prevalent (Anderson et al., 2015). As the popularity and utilization of these niche investment vehicles continue to grow, product specialization continues to develop in an effort to align with investor specific preferences (Huang, 2016; Junkus & Berry, 2015). This expansion has further heralded an even more recent development of screened ETFs – an investment vehicle that shares some similarities to but can vary significantly from conventional mutual funds (Lettau & Madhavan, 2018; Narend & Thenmozhi, 2016). Biblically responsible investment portfolios are a subset of socially responsible investment vehicles as a screening methodology is applied to exclude companies from the portfolio because of their judged social irresponsibility while including corporate securities because of their socially commendable behavior (Richey, 2017). However, this process should not be to the detriment of the client as both the acceptable level of risk and expected return of investment must be considered (Calvo et al., 2015).

This research study is specifically designed to contribute to the growing body of available literature related to this growing field of BRI ETFs. This was achieved by examining the effective return of biblically based investment portfolios as compared to other equity-only faith-based investment funds and their benchmark non-SRI ETFs. Additional discussion and details are provided in the following sections: (a) purpose statement, (b) role of the researcher, (c) participants, (d) research methods and design, (e) population sampling, (f) data collection, (g) data analysis technique, (h) reliability, and (i) validity.

Purpose Statement

The purpose of this descriptive quantitative study was to examine the intraday effective return of BRI ETFs as compared to other equity-only faith-based investment funds and their benchmark non-SRI indexes. The central focus of this study targeted the effective return of each examined investment fund by utilizing the fund NAV to calculate the intraday mean return yield for the period studied. The NAV represents the true book value of the funds, providing an effective return value to use for comparative purposes. Further, two performance proxies, Sharpe ratio and Jensen's alpha, are widely used by practitioners to assess the performance of funds and portfolios (Bidisha et al., 2017). The incorporation of these additional performance measures allows for a more robust analysis of fund performance, providing more insight and application considerations for the industry.

As existing literature has researched the impact of screening on the financial performance of a fund (Lesser et al., 2016), further insight into the drivers of outperformance or underperformance of BRI funds is warranted. Most socially responsible mutual funds' managers are not eager to give up financial performance in favor of higher scores associated with environmental, social, and governing aspects after screening companies for inclusion in the portfolio and beginning the asset allocation process (Utz et al., 2014). This study compared the performance of biblically responsible investment funds to other types of faith-based funds, as well as conventional benchmark funds with no socially responsible agenda.

Role of the Researcher

The role of the researcher was multi-dimensional given the requirements of this quantitative study. Traditionally, fixed designs assume a detached role of the researcher to guard against personal bias influencing the findings of the research (Robson & McCartan, 2016).

Further, in this non-experimental fixed design, the phenomena studied are not deliberately manipulated or changed by researcher, which has the advantage of not disturbing the concepts hoping to be examined (Robson & McCartan, 2016).

In non-experimental fixed designs, a conceptual framework or other approach to theory is the starting point of the study (Robson & McCartan, 2016). Variables are identified and possible relationships to be studied are provided (Robson & McCartan, 2016). Thus, to begin this study, the researcher explored the current academic body of literature related to socially responsible investing (Lesser et al., 2016; Nofsinger & Varma, 2014; Revelli, 2017) and more recent studies regarding the efficacy of Christian-based socially responsible mutual funds (Stultz, 2016). Examining the variables in the related studies, such as Purohit and Malhotra (2015) and Bidisha et al. (2017), guided the researcher to determine the appropriate variables to include in this dissertation research study. Variables included are only those considered relevant to the specific research questions (Robson & McCartan, 2016).

Following the appropriate protocol, the researcher formulated research questions with decisions regarding data collection, sampling strategy, and analysis determined prior to actual data collection (Robson & McCartan, 2016). The researcher specifically evaluated the reliability and validity of the research data, exposing potential inherent risks, and providing how such risks are mitigated. In doing so, the researcher seeks to establish trustworthiness in the fixed design research study (Robson & McCartan, 2016).

The researcher then collected the data from publicly available third-party sources and analyzed the data as outlined in the data analysis section. Statistical methods were utilized to determine the statistical significance of the differences in the effective return between the groupings outlined in the research questions and hypotheses. The results were calculated by the

researcher and evaluated, with conclusions formed against the defined research questions and hypotheses. Further detail regarding the specific steps taken by the researcher to determine the population, sample size, data collection techniques, data organization rules, data analysis strategy, reliability and validity concerns are described in the following Section.

Participants

Given the nature of this study, no source participants were used. The research questions and related research hypotheses regarding the effective return of biblically responsible ETFs were examined using publically available sources and archival data. Morningstar was the main source with publicly accessible advisor websites used to retrieve company background and marketing materials to validate third-party data as needed. No confidential, personal, or sensitive data were collected for this study.

Research Method and Design

The method and design for this specific dissertation was intentionally constructed to address the stated research questions and hypothesis. Publically available sources provided the archival data needed for analysis and examination to determine the statistical significance of findings. Further detail in regards to the research method and design is provided below.

Method. The quantitative method was chosen as the performance and underlying variables of investment funds will be reviewed. This type of study is preferred given the type of performance analysis and comparison between BRI ETFs, other equity-only faith-based investment funds, and non-socially screened benchmark funds (Creswell, 2013). A quantitative approach is appropriate as a theory, consisting of variables measured by numbers, will be tested using statistics to explain or predict the phenomena of interest (Yilmaz, 2017).

Design. An observational descriptive research design was chosen as more than one group of data were being examined in this applied doctoral research study. It is considered a non-experimental fixed design as it is concerned with aggregates with group properties and general tendencies which are not deliberately manipulated or changed by the researcher (Robson & McCartan, 2016). Further, a descriptive research design seeks to describe the current status of a phenomenon or variable with data collection being mostly observational in nature (Creswell, 2013). The archival data of fund performance for each chosen index were extracted from Bloomberg and augmented by Morningstar, a reputable source utilized by Financial Industry Regulatory Authority, with performance being evaluated based on the results of the chosen statistical analyses. The fee-adjusted and risk-adjusted quarterly yields were derived for the selected portfolios to be compared to the average of other equity-only faith based investment funds, as well as their respective non-socially screened benchmark funds over a longitudinal period. The intraday return yield and calculated beta coefficient were included in each raw data set for the calendar period evaluated. The existence of a statistically-significant differences between the effective fund performance for each type of investment portfolio selected were tested in this study. This approach is similar to other research such as Trinks and Scholtens (2017) and Bidisha et al. (2017) that utilized observational descriptive data in their published analysis.

Summary of research method and design. In summary, the observational descriptive design was most appropriate for the quantitative research method chosen for this study. This is due to the study's utilization of statistical analyses tools to examine the intraday effective return of BRI ETFs as compared to other equity-only faith-based investment funds and their relative non-socially screened benchmark funds. As a phenomenon is described through observation

rather than through experimental procedures, other quantitative research designs are deemed inappropriate.

Population and Sampling

This dissertation research study was designed to provide a comparative analysis of risk-adjusted intraday performance between (a) BRI ETFs, (b) equity-only faith-based investment funds, and (c) non-socially screened benchmark funds. In order to conduct this study, a starting population and appropriate sample subset needed to be determined. The below discussion provides a detailed description of the population and sample selection process using a purposive sampling method.

Discussion of population. The intention of this non-experimental fixed design research study is to provide a representative sample of the population of BRI ETFs – an encouraged standard for research (Robson & McCartan, 2016; Salkind, 2017). The sampling method utilized in this study is classified as purposive sampling as the researcher’s judgement is used to achieve a particular purpose (Robson & McCartan, 2016). In this method, a sample is built to enable the researcher to satisfy their specific needs in a project (Robson & McCartan, 2016). As such, the intended population for this study was determined using eVALUEator tool that classifies investment funds into the following three screening categories: social, environmental, and religious (eVALUEator, 2018). The total number of investment funds tracked by this tool is unknown as it requires at least one top-level filter. As the focus for this study was all BRI ETF, a top-level filter of “Christian” was applied to provide 54 results. Only five ETFs were included in this population. This population was further validated by the Morningstar Advisor Workstation tool that tracks a total of 258,130 securities (Morningstar Advisor Workstation 2.0, 2018). Under the “All Securities Universe” category, a filter was applied to yield “socially

conscious” and “ETF” type securities. Detailed information for the five biblically responsible ETFs identified by the eVALUEator tool, such as inception date and primary prospectus benchmark, were augmented with Morningstar data that yielded a total of 66 results. As the “socially conscious” filter includes environmental responsibility, human rights, or religious views, the data listing was used as a cross-reference tool for the information provided by the eVALUEator database.

The eVALUEator tool also supplied the population of equity-only faith-based investment funds with a top-level filter of “Religious” being applied, supplying a listing of 119 results. This population was further validated by the Morningstar Advisor Workstation tool. Under the “All Securities Universe” category, a filter for “socially conscious,” “ETF,” and “MF” investments was applied to yield 885 investments. Detailed information for all investments identified by the eVALUEator tool, such as inception date and primary prospectus benchmark, was augmented with Morningstar population. The fund ticker, name, and the common investor grade “A” class shares for instances when multiple share classes existed were also matched between the two databases.

Discussion of sampling. Robson and McCartan (2016) purported that an appropriate sample size for non-experimental designs involving relations in a single group is $n=30$. This study is designed to review the effective intraday return of equity-only BRI ETFs for the period studied (2/27/2017 – 3/30/2018), yielding a sample size of $n = 273$, as compared to other equity-only faith based funds and their non-socially screened benchmark funds. Further, this study utilized the Sharpe ratio and Jensen’s alpha as proxies for return performance for the period studied. As performance prediction has been found to be correlated with observed historical mean data (Sonsino & Shavit, 2014), solely the equity-only BRI ETFs have at least a year’s

worth of data were included in the sample. Of the five BRI ETFs identified in the above population, only two were equity-only ETFs with an inception date greater than a year. Table 1 provides a brief profile, pulled from Morningstar, of the ETFs included in the sample. The listed benchmarks in the table was also included in the sample of benchmark funds. In the absence of a prospectus-defined benchmark, the analyst assigned benchmark identified in the Morningstar database was utilized in the comparative study.

Table 1

BRI ETFs

ETF Scheme	Inception Date	Category	Benchmark
Inspire Small/Mid Cap Impact ETF (ISMD)	2/28/2017	US Fund Mid-Cap Blend	Russell Mid Cap TR
Inspire Global Hope ETF (BLES)	2/28/2017	World Large Stock	MSCI ACWI NR

To determine the sample of equity-only faith-based investment funds, the population described above was further filtered in the eVALUEator tool by the two categories of the above BRI ETF categories (“US mid-cap,” “US small cap,” and “world large stock”). The “US small cap” filter was applied as the BRI ETF falls between the small and mid-cap categories embedded in both the eVALUEator and Morningstar databases. The funds identified by the eVALUEator tool were augmented by cross-referencing their inclusion in the filtered Morningstar population for the above categories. All non-equity portfolios were removed from the sample in consideration of both the research questions and related hypothesis associated with this study. This criterion election narrows the focus of this study to a specific asset class while providing a simplified basis to evaluate BRI ETF investment funds. A listing of all equity-only faith-based investment funds included in the sample is provided in Appendix A. As this study will examine

the effective intraday return of the investment funds within the sample, the total number of trading days within the period of 2/27/2017 – 3/30/2018 is the basis for the sample size, yielding a sample of $n = 273$. This large sample helps improve the overall quality of the research study.

Summary of population and sampling. A total of 23 investment funds were included in the final sample selection: (a) 2 BRI ETFs, (b) 4 US small blend equity-only faith-based funds, (c) 3 US mid-cap blend equity-only faith-based funds, (d) 4 world large stock equity-only faith based funds, and (e) 10 benchmark index funds. The sample size was the number of trading days in the period studied of February 27, 2017 – March 30, 2018 ($n = 273$) as the intraday return was calculated for each of the identified funds. The appropriate return comparisons for the sampled categories was made to address the three research questions posed in this dissertation research study.

Data Collection

The data required to address and analyze the research questions and indicated hypotheses was collected as part of this quantitative dissertation study. The below discussion details the data instruments, data collection techniques, and organization methods employed throughout the process. A summary of the data collection process is then provided.

Instruments. There were no specific data gathering instruments utilized in this dissertation study. As this study examined historical data of investment funds, all raw data were collected from publicly available third-party archival sources of record, including but not limited to, Bloomberg, Morningstar, and eVALUEator. The data gathered were stored in the Microsoft Office products (Word and Excel). The intraday NAV for each of the funds included in the sample is a dependent scale variable in the study that facilitates the calculation of the intraday

return yield percentage (Purohit & Malhotra, 2015), Sharpe ratio, and Jensen's alpha (Bidisha et al., 2017).

Data collection techniques. Data included in this dissertation were acquired from publicly available third-party sources, which included but were not limited to Bloomberg, Morningstar, and eVALUEator. The historical daily NAV for the period studied (i.e., 2/28/2017-3/30/2018) was pulled for each fund included in the subset sample of investment funds listed in Table 1 and Appendix A. These values were stored in Microsoft Excel with additional sources utilized as cross references as needed for data validation and correction. No survey or interview questions were utilized in this collection.

Data organization techniques. Microsoft Word and Microsoft Excel spreadsheet tables were used to collect all data in this research study. All data were primarily stored on flash storage drives owned by the researcher to guard against data loss in the event of a computer malfunction or corruption. Lists of researched funds and commentary notes were recorded in Microsoft Word to record progress, track advancement, and maintain consistency throughout the study.

Population and sample organization. Microsoft Excel spreadsheets were utilized to track the detailed fund information and associated data. A raw list of BRI ETFs, equity-only faith-based investment funds, and benchmark funds was listed in Excel and manipulated based on the filtering criteria outlined in the above sections. The final sample of investment funds included in the study was stored in Excel with associated key descriptive information included.

Investment fund performance data organization. Investment fund return information were collected in separate spreadsheets, with different data sets used for each research question and associated hypotheses. A designated tab was assigned for each fund with the daily NAV

prices listed for the period February 28, 2017 through March 30, 2018. The return yield was listed in a separate column, calculated as the delta from day to day. Excess return for the year was calculated between the mean return of the fund and the risk-free rate, as required for the Sharpe ratio (Bidisha et al., 2017). Similarly, excess return for the year was calculated between the returns of the fund and its corresponding representative market index, as required for Jensen's alpha (Bidisha et al., 2017). Summary data were calculated including the beta coefficient for the funds for the given time period, variance, standard deviation, and standard error. Separate columns were used to show the matched period return of the prospectus-stated benchmark index, as well as, the matched period average return for the equity-only faith-based investment funds.

Summary of data collection. The data used for this quantitative study were historical and archival in nature. As such, all raw data were collected from publicly-available third-party archival sources of record, including but not limited to, Bloomberg, Morningstar, and eVALUEator. The data were stored and organized in Microsoft Word and Microsoft Excel on the password protected computer of the researcher. A flash drive was utilized to back up the files to prevent potential data loss in the event of computer malfunction or corruption.

Data Analysis

This research study required groupings of data which was determined by the eVALUEator classification, Morningstar classification, and further examination of prospectus materials for each fund. The research questions and hypotheses applicable to this study examined the intraday effective returns between BRI ETFs, equity-only faith-based socially responsible investment funds, and non-socially screened benchmark funds. To test the hypotheses, the risk-adjusted returns were used as proxies to compare the risk and return

performance of the sampled investment funds. The below discussion provided the variables in the study with a detailed description of the dependent variables and the statistical tests utilized to test the study hypotheses.

Variables used in the study. The below table provides a listing of variables relevant to this dissertation study.

Table 2

Variables

Variable	Classification	Type
BRI ETF Mid-Cap Blend	Independent	
BRI ETF World Large Stock	Independent	
Equity-only Faith-based Mid-Cap Blend	Independent	
Equity-only Faith-based World Large Stock	Independent	
Benchmark Funds	Independent	
Intraday NAV	Dependent	Scale
Intraday Return Yield	Dependent	Scale
Sharpe Ratio	Dependent	Scale
Jensen's Alpha	Dependent	Scale

Intraday NAV and Return Yield. The daily NAV value was chosen over the daily close price as the NAV-based ETF returns purely reflects the changes in prices of the underlying stock basket and are, therefore, free from the effects of demand and supply conditions (Purohit & Malhotra, 2015). However, market prices of the ETFs reflect the actual (realized) returns to the ETF investors and incorporate the demand and supply conditions of the ETF market, which can result in a deviation between NAV and price of ETFs (Purohit & Malhotra, 2015). While there

is no consensus on the appropriateness of any particular measure of returns (Purohit & Malhotra, 2015), the closing daily NAV price was utilized in this research study to calculate the return yield. The daily NAV return yields were computed as follows:

$$R_{nav} = (NAV_t - NAV_{t-1}) / NAV_{t-1} \times 100$$

where R_{nav} is the daily return yield based on NAV. NAV_t and NAV_{t-1} are the daily NAV at time t and $t-1$.

Sharpe ratio. The Sharpe ratio provides an indication of how well the return of an asset compensates the investor for the risk taken (Bidisha et al., 2017; Petronio, Lando, Biglova, & Ortobelli, 2014; Sharpe, 1994). Adjustment for risk is essential as higher risk brings higher reward in a well-functioning market (Fama & MacBeth, 1973). Thus, the Sharpe ratio is used to measure excess return (raw return minus the return of a comparable risk-free investment) per unit risk, as measured by the standard deviation of raw returns (Bidisha et al., 2017; Sharpe, 1994).

The Sharpe ratio for the funds is calculated as follows:

$$S_e = \frac{R_e - R_f}{\sigma_e}$$

where S_e represents the Sharpe Ratio. R_e is the intraday mean return of the fund, and R_f is the appropriate risk-free rate. Finally, σ_e represents the intraday standard deviation of returns of the fund.

Similarly, the Sharpe ratio for the representative market is computed as follows:

$$S_m = \frac{R_m - R_f}{\sigma_m}$$

where S_m represents the Sharpe ratio of the benchmark market index, R_m is the intraday mean return of the benchmark market index, R_f is the appropriate risk-free rate, and σ_m reflects the intraday standard deviation of the benchmark market index. For risk-free rate proxies, the three-month US Treasury Bill rates will be used for both the US and World markets (Bidisha et

al., 2017). When comparing two assets with a common benchmark, the one with the higher Sharpe ratio provides a better return for the same risk while a negative Sharpe ratio is indicative of a riskless asset performing better than the security being analyzed Petronio et al. (2014).

Jensen's alpha. While the Sharpe ratio is a practitioner's tool used to judge the risk-return profile of a fund, it does not specifically control for market variations that may affect the fund (Bidisha et al., 2017). Thus, Jensen's α addresses this as it represents the excess returns over expected returns given the level of market risk for its corresponding market index (Bidisha et al., 2017). This is computed by regressing the excess returns of the representative market index on the excess return of the comparable fund with the level of risk measure by beta (Bidisha et al., 2017). Jensen's α is obtained from the following regression:

$$R_e - R_f = \alpha + \beta \times (R_m - R_f) + \varepsilon$$

where R_e represents the intraday returns of the fund, R_m is the intraday returns of the corresponding benchmark index, R_f is the appropriate risk-free rate, and ε is the error term. The intercept term, α , is Jensen's α , measuring the funds excess, risk-adjusted intraday return above that of the corresponding benchmark index. The measure of the sensitivity to the market movement is represented by the coefficient β .

As the first hypothesis compares the two BRI ETFs to their respective groups of equity-only faith-based investment funds, the following Jensen's α formula will be utilized:

$$R_e - R_f = \alpha + \beta \times (R_{af} - R_f) + \varepsilon$$

where R_e represents the intraday returns of the fund, R_{af} is the intraday returns of the corresponding grouping of equity-only faith-based investment funds, R_f is the appropriate risk-free rate, and ε is the error term.

Hypothesis 1. The first null hypothesis and sub-hypotheses propose there is no statistically significant difference between the intraday effective return of BRI ETFs and other equity-only faith-based investment funds for the mid-cap blend and world large stock categories. To test this hypothesis, the intraday return yield based on the daily NAV were calculated between the sub-divided groups (mid-cap and world large stock) of BRI ETFs and equity-only faith-based socially responsible investment funds. The intraday risk-adjusted returns of the mid-cap BRI ETF were compared to the mean risk-adjusted returns of the seven small/mid-cap returns of the equity-only faith-based investment funds. The same process was followed for the world large stock category with the one world large stock BRI ETF compared to the mean returns of the four world large stock equity-only faith-based investment funds. A paired samples t test will be run on the comparison of intraday returns between the BRI ETF and the mean returns of the equity-only faith-based investment funds for each category, mid-cap and world large stock if the descriptive statistics indicate a normal distribution. However, if the assumptions of the paired samples t test were violated, the non-parametric Wilcoxon test was utilized. This statistical analysis is appropriate given the number of independent variables, type of dependent variables, and comparison within the independent variable (Morgan, Leech, Gloeckner, & Barrett, 2013).

The intraday mean return and intraday standard deviation for the period studied (2/27/2017 – 3/30/2018 or 273 days) were also assessed and the Sharpe ratio calculated using the data of the compared funds. Further, Jensen's α was calculated for the BRI ETFs using the intraday mean return of the group of mid-cap equity-only faith based funds (R_{af}) and the intraday mean return of the BRI ETFs (R_e). These two ratios are widely used by practitioners to assess the performance of funds and portfolios (Bidisha et al., 2017). The incorporation of these

additional performance measures allows for a more robust analysis of fund performance, providing more insight and application considerations for the industry.

Hypothesis 2. The second null hypothesis and sub-hypotheses of this study purports that there is no statistically significant difference between the intraday effective return of mid-cap and world large stock BRI ETFs and benchmark funds that do not have a specific socially responsible investing agenda. To test this hypothesis, the intraday return yield based on the daily NAV was calculated between the sub-divided groups (mid-cap and world large stock) of BRI ETFs and their identified benchmark funds. A paired samples *t* test was run on the comparison of intraday returns between the BRI ETF and the returns of the benchmark index if the descriptive statistics indicate a normal distribution. However, if the assumptions of the paired samples *t* test were violated, the non-parametric Wilcoxon test was utilized. This statistical analysis is appropriate given the number of independent variables, type of dependent variables, and comparison within the independent variable (Morgan et al., 2013).

The intraday mean return and standard deviation for the period studied was assessed and the Sharpe ratio calculated using the data of the compared funds. Further, Jensen's α was calculated for the BRI ETFs using the intraday mean return of the benchmark index (R_m) and the intraday mean return of the BRI ETFs (R_e). The results of these performance measures were compared and assessed in light of the results of the paired samples *t* test to provide a multi-dimensional analysis of fund performance.

Hypothesis 3. The third null hypothesis and sub-hypotheses of this study submits that there is no statistically significant difference between the intraday effective return of mid-cap blend and world large stock equity-only faith-based investment funds and benchmark funds that do not have a specific socially responsible investing agenda. To test this hypotheses, the

intraday return yield based on the daily NAV was calculated between the sub-divided groups (mid-cap and world large stock) of equity-only faith-based investment funds and their identified benchmark funds. A paired samples *t* test was run on the comparison of intraday returns between the equity-only faith-based investment funds and the returns of the benchmark index if the descriptive statistics indicated a normal distribution. However, if the assumptions of the paired samples *t* test were violated, the non-parametric Wilcoxon test was utilized. This statistical analysis is appropriate given the number of independent variables, type of dependent variables, and comparison within the independent variable (Morgan et al., 2013).

The intraday mean return and standard deviation for the period studied was assessed and the Sharpe ratio calculated using the data of the compared funds. Further, Jensen's α was calculated for the equity-only faith-based investment funds using the annual mean return of the benchmark index (R_m) and the annual mean return of the equity-only faith-based investment funds (R_e). These two performance measures were assessed in conjunction with the parametric paired samples *t* test or the non-parametric Wilcoxon two related samples tested to more thoroughly assessed fund performance.

For all statistical tests, a hypothesized mean difference level of $\alpha = .05$ was utilized. This is considered an appropriate level for rejecting the null hypotheses, as it is a standard level for this type of statistical analysis (Morgan et al., 2013). If the assumptions of the paired samples *t* test were violated, the nonparametric Wilcoxon test for the two related samples was employed (Morgan et al., 2013). A position of impartiality and neutrality was maintained during the collection and analysis of this data. This is consistent with the observations of Creswell and Poth (2017) regarding the proper scientific methodology when approaching quantitative research.

Summary of data analysis. The intraday daily return was calculated and compared between the groupings indicated in the hypotheses and sub-hypotheses. An intraday mean return was used in the chosen performance proxies, Sharpe ratio and Jensen's α , to examine the intraday risk-adjusted returns for compared funds for the period studied (2/27/2017 – 3/30/2018 or 273 days). A paired sample t test was utilized in the daily mean return testing. Results of the statistical analysis and their interpreted meanings as related to the research hypotheses are provided in Section Three that details the results, drawn conclusions, and applications to the professional practice.

Reliability and Validity

While the results of a quantitative study are important, consideration must be given to the rigor of the research (Heale & Twycross, 2015). Rigor is defined as the “extent to which the researchers worked to enhance the quality of the studies, which is achieved through the measurement of validity and reliability” (Heale & Twycross, 2015, p. 66). Salkind (2017) cautions that if the tools used to collect data are unreliable or invalid, the best possible results achieved are inconclusive. As such, this section defined and addressed the anticipated risk to reliability and validity of this study to allow the findings to be evaluated from an informed perspective.

Reliability. The reliability of an academic study is paramount to the use of the results. In a quantitative study, reliability is measured by the ability to reproduce similar results when testing is confirmed by independent researchers (Robson & McCartan, 2016). In other words, reliability applies to the consistency of a measure (Heale & Twycross, 2015).

As this dissertation study was quantitative in nature, it was constructed to rely on archival data that were publicly available from third-party resources. Multiple sources provided the

primary data elements used, including daily close NAV, beta, and prospectus fund benchmarks that were generally without conflict between the third party sources. This research specific to the biblically responsible screened ETFs also relied on data made available from eVALUEator, a primary source that was combined with and confirmed by information available from other third-party sources. Independent study of the fund's prospectus and marketing materials was conducted on an as needed basis.

Given the recent development of the specific biblically responsible screening metrics, there is no universal definition of the meaning nor is there a singular metric to measure against. As such, research subjectivity does factor into the analysis, but is mitigated by relying on the common definitions established by third-party data providers and recent studies regarding the efficacy of Christian-based socially responsible investment funds (Stultz, 2016). The listing of examined BRI ETFs, equity-only faith-based investment funds, and benchmark funds are provided in Appendix A.

Validity. An academic study achieves validity when the results are considered accurate (Robson & McCartan, 2016). While the instrument may produce consistent data (evidence for reliability), the data may not be valid if it is not an accurate measure of the intended concept (Morgan et al., 2013). As no one type of evidence alone is sufficient to support validity, all pertinent evidence from as many of the types of evidence possible should be integrated to test validity (Morgan et al., 2013).

This should include some evidence in addition to content evidence (Morgan et al., 2013). Content evidence requires the content to be a reasonable representation of the concept that one is attempting to measure (Heale & Twycross, 2015; Morgan et al., 2013; Salkind, 2017). In this dissertation research study, only investment funds meeting the specific criteria discussed earlier

were included. However, as this study was dependent on the determination of biblical and other equity-only faith-based screening techniques, classification errors could be introduced. With this awareness, the researcher used caution to accept the determination categories of screened portfolios from third-party provider eVALUEator, with verification as necessary from other external sources. These sources included Bloomberg, Morningstar, other publicly-available third-party sources, as well as, fund prospectus materials. The other variables collected for each investment fund, such as the daily NAV and beta coefficient, are all industry standard terms that are commonly accepted, allowing for consistency and reducing threats to validity.

Risks associated with generalizability, also known as external validity, often center around improper conclusions being derived from sample data (Robson & McCartan, 2016). To address this risk, Robson and McCartan (2016) suggested the general strategy of making a case with a persuading argument that the group studied is representative. As the sample for this study included the entire population of global biblically responsible exchange traded funds that met the defined research criteria, the application of the sample results to the broader population was a mitigated concern.

Summary of reliability and validity. The risks to reliability and validity for this quantitative research study were addressed in order to allow the findings to be evaluated from an informed perspective. As the data examined in this study were archival from publicly available third-party sources, the investment fund variables were compared between multiple databases, supporting the requirement for consistency in data. Further, as there is no general definition of biblically responsible investments, the researcher relied upon a third-party source while supplementing the categorization of funds with information from other third-party sources and

fund prospectus. As all biblically responsible exchange traded funds were included in the sample of this study, a persuading argument was made that the group studied was representative.

Transition and Summary of Section 2

The increased utilization of exchange traded funds coupled with the rising interest in morals based investing inspired the investigation into the performance of BRI ETFs as compared to the performance of other equity-only faith-based investment funds and their relative benchmark funds. A derivative of the increasingly popular socially responsible investment funds, BRI ETFs sought to provide Christians with an opportunity to participate in the financial marketplace while upholding their deeply held faith-based beliefs. While Christian-based socially responsible mutual funds have been examined (Stultz, 2016), ETFs are a relatively newer investment vehicle that claim varying benefits to the investor (Hodaszy, 2017; Hougan, 2014), making them a potentially potent investment tool for inclined investors.

This section presented the construction of the dissertation study by detailing the role of the researcher, process by which the sample was chosen, data collection techniques, and data analysis strategy. The applicable variables were detailed with specifics to their testing outlined. Finally, the consideration of reliability and validity was discussed as it specifically relates to this quantitative study.

Section Three will discuss the findings and results of the study. Each research question was individually examined and the associated hypotheses tested, with the resulting outcome assessed for a conclusion. Recommendations for action, implication for practice, and suggested further actions was provided. Finally, insight into the research process from the perspective of the researcher concludes the section.

Section 3: Application to Professional Practice and Implications for Change

The growth of the financial planning industry has ushered in a new clientele seeking a tailored investment product that marries both high performance and personal values. Thus, socially responsible investment funds have been subject to several recent research studies as authors test their efficacy for academia credibility and practitioner integration. Religious-based funds, a subset of the broader category of SRI, have also gained in intrigue, with biblically responsible investment funds trending in development. As ETFs are considered a relatively new type of investment vehicle, a gap in literature exists in the effective return of BRI ETFs. Yet, such investment funds, if proven financially salient, provide a compelling opportunity for believers that seek to financially steward their resources according to Christian orthodoxy.

The findings of this research study are presented in the below section. The research questions and associated hypotheses presented in Section One were reviewed, with the results intending to contribute to the corpus of academic literature. This section was organized in the following manner: (a) overview of the study, (b) presentation of the findings, (c) applications to professional practice, (d) recommendations for actions, (e) recommendations for further study, (f) reflections of the researcher, and (g) summary and study conclusions.

Overview of the Study

As ETFs are still considered a relatively new investment vehicle in the financial planning industry, they are an even more recent addition to academic literature. While several scholars have examined socially responsible mutual funds, socially responsible ETFs have been a growing trend that are beginning to warrant further investigation. Additionally, research examining the efficacy of faith-based investments is limited with results inconclusive. This

dissertation study was developed and conducted to contribute to the current body of available knowledge to fill the identified gap.

The design of this study was influenced by the intention to appropriately address the research questions and associated hypotheses outlined in Section One. Each research question utilized the examined funds intraday risk-adjusted return yield, as calculated from the intraday NAV, to compare between the two samples indicated in the question. A total of 23 investment funds were included in the final sample selection: (a) two BRI ETFs, (b) four US small blend equity-only faith-based funds, (c) three US mid-cap blend equity-only faith-based funds, (d) four world large stock equity-only faith based funds, and (e) 10 benchmark index funds. The Sharpe ratio and Jensen's alpha are two ratios widely used by practitioners to assess the performance of funds and portfolios (Bidisha et al., 2017). The incorporation of these additional performance measures allows for a more robust analysis of fund performance, providing more insight and application considerations for the industry. The evaluation of the intraday risk-adjusted returns indicated statistically similar performance between all funds examined. Only one equity-only faith-based investment fund had a statistically higher return than its respective non-socially screened benchmark index. This research suggests that practitioners can propose a morality-driven investment portfolio without sacrificing financial returns. The following section provides a more detailed discussion of the results.

Presentation of the Findings

The below section presents the findings of this dissertation research study. The following investigation was designed to address the research questions outlined in Section One. The associated hypotheses are provided with a description of how each hypothesis and sub-

hypotheses was tested. The link from the conclusion of the tests to the associated research questions is clearly evidenced.

The data were constructed based on the intraday return yields of the NAV. The daily NAV value was chosen over the daily close price as the NAV-based ETF returns purely reflects the changes in prices of the underlying stock basket and are, therefore, free from the effects of demand and supply conditions (Purohit & Malhotra, 2015). However, market prices of the ETFs reflect the actual (realized) returns to the ETF investors and incorporate the demand and supply conditions of the ETF market, which can result in a deviation between NAV and price of ETFs (Purohit & Malhotra, 2015). While there is no consensus on the appropriateness of any particular measure of returns (Purohit & Malhotra, 2015), the closing daily NAV price was utilized in this research study to calculate the return yield.

Descriptive statistics were run over each pairing of funds relevant to each hypothesis to confirm the appropriate parametric or non-parametric test run. As previously discussed in Section 2, a paired samples t test was determined to be the appropriate parametric test given the number of independent variables, type of dependent variables, and comparison within the independent variable (Morgan et al., 2013). However, if the assumptions of the paired samples t test are violated, the nonparametric Wilcoxon test for the two related samples was employed (Morgan et al., 2013).

An assumption inherent in the paired samples t test is a normal distribution of the dependent variable. The skewness and kurtosis of the distribution indicate the normal or non-normally shaped distributions (Morgan et al., 2013). Skewness pertains to the curve of the distribution, which is considered normal at (0,0). Morgan et al. (2013) provided an arbitrary guideline that a skewness of more than +1.0 or less than -1.0 is indicative of a distribution that is

markedly skewed. However, as the two-tailed t test is quite robust, the authors assert that a skewness of more than ± 1 may not change the results much (Morgan et al., 2013).

Kurtosis refers to the peak of the distribution as thin tails would indicate a positive kurtosis and thick tails would signify a more flat curve and negative kurtosis (Morgan et al., 2013 194). The authors asserted that the results of most statistical analyses are not seemingly affected by kurtosis (Morgan et al., 2013). However, a kurtosis of more than $+3.0$ or less than -3.0 is indicative of a non-normally shaped distribution. As such, a Wilcoxon test for the two related samples was utilized for the paired data.

The below section relays the details of the results for each hypothesis and sub-hypothesis. The descriptive statistics of each pairing are provided to support the use of the parametric t test or non-parametric Wilcoxon two related samples test. The results of the statistical analysis follow with implications and statistical significance clearly stated.

Hypothesis 1. The first null hypothesis and sub-hypotheses propose there is no statistically significant difference between the intraday effective return of BRI ETFs and other equity-only faith-based socially responsible investment funds for the mid-cap blend and world large stock categories. To test this hypothesis, the intraday return yield based on the daily NAV was calculated between the sub-divided groups (mid-cap and world large stock) of BRI ETFs and equity-only faith-based socially responsible investment funds. The intraday risk-adjusted returns of the mid-cap BRI ETF were compared to the intraday risk-adjusted mean returns of the seven small/mid-cap returns of the equity-only faith-based investment funds. The same process was followed for the world large stock category with the one world large stock BRI ETF compared to the mean returns of the four world large stock equity-only faith-based investment funds.

Mid-cap BRI ETF v. other equity-only faith-based investment funds. Below is a table of the descriptive statistics of the mid-cap BRI ETF and the comparative group comprised of the seven small/mid-cap equity-only faith-based investment funds.

Table 3

Mid-cap BRI ETF

Category	Fund Name	Mean (%)	Standard Deviation	Skewness	Kurtosis
Mid-Cap	Inspire Small/Mid Cap Impact ETF (ISMD)	0.0209	0.0081	-0.7133	2.0303
Mid-Cap	Equity-Only Faith-Based Funds	0.0125	0.0079	-1.0663	3.3482

As the skewness and the kurtosis of the mean returns of the equity-only faith-based funds are indicative of a non-normally shaped distribution, the assumption of the paired samples *t* test was violated. As such, the Wilcoxon two related samples test was appropriate for the statistical analysis between the pairing.

Wilcoxon signed ranks tests were used to compare the intraday mean return yield of the mid-cap BRI ETF and the grouping of seven small/mid-cap of equity-only faith-based investment funds. Of the 273 days studied, the mid-cap BRI ETF had higher intraday return yields 124 days, the equity-only faith-based investment funds group had higher intraday return yields 149 days, and there were 0 ties. However, there was no statistically-significant difference between the intraday mean return yields between the mid-cap BRI ETF and the group of mid-cap equity only faith-based investment funds, $N = 273$, $z = -1.292$, $p = 0.196$, $r = -0.078$. See Appendix B for summarized results.

The intraday Sharpe ratio and Jensen's α for the mid-cap BRI ETF and the group of equity-only faith-based investment funds were calculated and assessed for the period studied (2/27/2017 – 3/30/2018 or 273 days). When comparing two assets with a common benchmark, the one with the higher Sharpe ratio provides a better return for the same risk while a negative Sharpe ratio is indicative of a riskless asset performing better than the security being analyzed (Petronio et al., 2014; Sharpe, 1994). Based on the analysis provided in Appendix C, the mid-cap BRI ETF had a higher Sharpe ratio than the grouping of seven other equity-only faith-based investment funds, indicating a better return for the same risk. However, as the Sharpe ratio does not control for market variations, Jensen's α was computed by regressing the excess risk-adjusted return yields of the mid-cap BRI ETF on the excess average risk-adjusted return yields of the group of other equity-only faith-based investment funds. The results indicate a beta of 93.856% and an intraday α of 0.0090% for the mid-cap BRI ETF.

In summary, the Wilcoxon test for two related samples indicates there is no statistically-significant difference between the intraday return yield of the mid-cap BRI ETF and the compared group comprised of seven other equity-only faith-based investment funds. As such, the null sub-hypothesis stating there is no statistically significant difference between the intraday effective return of mid-cap blend BRI ETFs and other mid-cap blend equity-only faith-based socially responsible investment funds is not rejected. In other words, no statistically significant difference in the intraday performance of mid-cap blend BRI ETFs and other mid-cap blend equity-only faith-based socially responsible investment funds was found. However, the higher Sharpe ratio of the mid-cap BRI ETF suggests a better return for the same risk. Similarly, after controlling for market movements, Jensen's α shows that the mid-cap BRI ETF beat the performance of the other equity-only faith based investment funds.

World large stock BRI ETF v. other equity-only faith-based investment funds. Below is a table of the descriptive statistics of the world large stock BRI ETF and the comparative group comprised of the four world large stock equity-only faith-based investment funds.

Table 4

World large stock BRI ETF v. other equity-only faith-based investment funds

Category	Fund Name	Mean (%)	Standard Deviation	Skewness	Kurtosis
World Large Stock	Inspire Global Hope ETF (BLES)	0.0485	0.0060	-0.5127	5.3024
World Large Stock	Equity-Only Faith-Based Funds	0.0293	0.0068	-1.4161	6.7430

As the skewness and the kurtosis of the mean returns of the equity-only faith-based funds are indicative of a non-normally shaped distribution, the assumption of the paired samples *t* test was violated. As such, the Wilcoxon two related samples test was appropriate for the statistical analysis between the pairing.

Wilcoxon signed ranks tests were used to compare the intraday mean return yield of the world large stock BRI ETF and the grouping of four world large stock equity-only faith-based investment funds. Of the 273 days studied, the world large stock BRI ETF had higher intraday return yields 133 days, the equity-only faith-based investment funds group had higher intraday return yields 140 days, and there were 0 ties. However, there was no statistically-significant difference between the intraday mean return yields between the world large stock BRI ETF and the group of world large stock equity only faith-based investment funds, $N = 273$, $z = -0.311$, $p = 0.756$, $r = -0.019$. See Appendix B for summarized results.

The intraday Sharpe ratio and Jensen's α for the world large stock BRI ETF and the group of equity-only faith-based investment funds were calculated and assessed for the period

studied (2/27/2017 – 3/30/2018 or 273 days). Based on the analysis provided in Appendix C, the world large stock BRI ETF had a lower Sharpe ratio than the grouping of four other world large stock equity-only faith-based investment funds, indicating a worse return for the same risk.

However, as the Sharpe ratio does not control for market variations, Jensen's α was computed by regressing the excess risk-adjusted return yields of the world large stock BRI ETF on the excess average risk-adjusted return yields of the group of other equity-only faith-based investment funds. The results indicate a beta of 99.383% and an intraday α of -0.019% for the world large stock BRI ETF.

In summary, the Wilcoxon test for two related samples indicates there is no statistically significant difference between the intraday return yield of the world large stock BRI ETF and the compared group comprised of seven other equity-only faith-based investment funds. As such, the null sub-hypothesis that states there is no statistically significant difference between the intraday effective return of world large stock BRI ETFs and other world large stock equity-only faith based socially responsible investment funds is not rejected. Further, the higher Sharpe ratio of the world large stock BRI ETF suggests a worse return for the same risk. Similarly, after controlling for market movements, Jensen's α shows that the world large stock BRI ETF did not have excess returns over the comparative group.

Hypothesis 2. The second null hypothesis and sub-hypotheses of this study purports there is no statistically significant difference between the intraday effective return of mid-cap and world large stock BRI ETFs and benchmark funds that do not have a specific socially responsible investing agenda. To test this hypothesis, the intraday return yield based on the daily NAV was calculated and compared between the sub-divided groups (mid-cap and world large stock) of BRI ETFs and their identified benchmark funds to test for statistical significance.

The intraday mean return and standard deviation for the period studied was also assessed and the Sharpe ratio calculated using the data of the compared funds. Further, Jensen's α will be calculated for the BRI ETFs using the intraday mean return of the benchmark index (R_m) and the intraday mean return of the BRI ETFs (R_e). The results of these performance measures are discussed below.

Mid-cap BRI ETF v. non-socially screened benchmark fund. Below is a table of the descriptive statistics of the mid-cap BRI ETF and its comparative non-socially screened benchmark fund.

Table 5

Mid-cap BRI ETF v. non-socially screened benchmark funds

Category	Fund Name	Mean (%)	Standard Deviation	Skewness	Kurtosis
Mid-Cap	Inspire Small/Mid Cap Impact ETF (ISMD)	0.0209	0.0081	-0.7133	2.0303
Mid-Cap	Russell Mid Cap TR (RMV Index)	0.0135	0.0067	-1.0580	4.5857

As the skewness and the kurtosis of the mean returns of the non-socially screened benchmark index are indicative of a non-normally shaped distribution, the assumption of the paired samples t test was violated. As such, the Wilcoxon two related samples test was appropriate for the statistical analysis between the pairing.

Wilcoxon signed ranks tests were used to compare the intraday mean return yield of the mid-cap BRI ETF and the Russell Mid Cap TR index. Of the 273 days studied, the mid-cap BRI ETF had higher intraday return yields 133 days, the Russell Mid Cap TR index had higher intraday return yields 140 days, and there were 0 ties. However, there was no statistically-significant difference between the intraday mean return yields between the mid-cap BRI ETF

and the Russell Mid Cap TR index, $N = 273$, $z = -1.332$, $p = 0.740$, $r = -0.020$. See Appendix B for summarized results.

The intraday Sharpe ratio and Jensen's α for the mid-cap BRI ETF and Russell Mid Cap TR index were calculated and assessed for the period studied (2/27/2017 – 3/30/2018 or 273 days). When comparing two assets with a common benchmark, the one with the higher Sharpe ratio provides a better return for the same risk while a negative Sharpe ratio is indicative of a riskless asset performing better than the security being analyzed (Petronio et al., 2014; Sharpe, 1994). Based on the analysis provided in Appendix C, the mid-cap BRI ETF had a higher Sharpe ratio than the non-socially screened benchmark index, indicating a better return for the same risk. However, as the Sharpe ratio does not control for market variations, Jensen's α was computed by regressing the excess intraday risk-adjusted return yields of the mid-cap BRI ETF on the excess risk-adjusted return yields of the Russell Mid Cap TR index. The results indicate a beta of 110.70% and an intraday α of 0.006% for the mid-cap BRI ETF.

In summary, the Wilcoxon test for two related samples indicates there is no statistically significant difference between the intraday return yield of the mid-cap BRI ETF and the Russell Mid Cap TR index. As such, we fail to reject the null sub-hypothesis that states there is no statistically significant difference between the intraday effective return of mid-cap blend BRI ETFs and their benchmark funds that do not have a specific socially responsible investing agenda. However, the higher Sharpe ratio of the mid-cap BRI ETF suggests a better return for the same risk. Similarly, after controlling for market movements, Jensen's α shows that the mid-cap BRI ETF beat the performance of the non-socially screened benchmark index.

World large stock BRI ETF v. non-socially screened benchmark index. Below is a table of the descriptive statistics of the world large stock BRI ETF and the non-socially screened benchmark index.

Table 6

World large stock BRI ETF v. non-socially screened benchmark index

Category	Fund Name	Mean (%)	Standard Deviation	Skewness	Kurtosis
World Large Stock	Inspire Global Hope ETF (BLES)	0.0485	0.0060	-0.5127	5.3024
World Large Stock	MSCI ACWI NR (MXWD Index)	0.0485	0.0053	-1.2773	6.2256

As the skewness and the kurtosis of both the world large stock BRI ETF and non-socially screened benchmark index are indicative of a non-normally shaped distribution, the assumption of the paired samples *t* test was violated. As such, the Wilcoxon two related samples test was appropriate for the statistical analysis between the pairing.

Wilcoxon signed ranks tests were used to compare the intraday mean return yield of the world large stock BRI ETF and the non-socially screened benchmark index. Of the 273 days studied, the world large stock BRI ETF had higher intraday return yields 133 days, the non-socially screened benchmark index had higher intraday return yields 140 days, and there were 0 ties. However, there was no statistically-significant difference between the intraday mean return yields between the world large stock BRI ETF and the MSCI ACWI index, $N = 273$, $z = -0.200$, $p = 0.841$, $r = -0.012$. See Appendix B for summarized results.

The intraday Sharpe ratio and Jensen's α for the world large stock BRI ETF and the MSCI ACWI NR index were calculated and assessed for the period studied (2/27/2017 – 3/30/2018 or 273 days). When comparing two assets with a common benchmark, the one with the higher Sharpe ratio provides a better return for the same risk while a negative Sharpe ratio is indicative of a riskless asset performing better than the security being analyzed (Petronio et al., 2014; Sharpe, 1994). Based on the analysis provided in Appendix C, the world large stock BRI

ETF had a lower Sharpe ratio than the non-socially screened benchmark index, indicating a worse return for the same risk. However, as the Sharpe ratio does not control for market variations, Jensen's α was computed by regressing the excess risk-adjusted return yields of the world large stock BRI ETF on the excess intraday risk-adjusted return yields of the non-socially screened benchmark index. The results indicate a beta of 103.10% and an intraday α of -0.001% for the world large stock BRI ETF.

In summary, the Wilcoxon test for two related samples indicates there is no statistically significant difference between the intraday return yield of the world large stock BRI ETF and the non-socially screened benchmark index. As such, we fail to reject the null sub-hypothesis that states there is no statistically significant difference between the intraday effective return of world large stock BRI ETFs and their benchmark funds that do not have a specific socially responsible investing agenda. Further, the higher Sharpe ratio of the world large stock BRI ETF suggests a worse return for the same risk. Similarly, after controlling for market movements, Jensen's α shows that the world large stock BRI ETF did not have excess returns over the MSCI ACWI NR benchmark index.

Hypotheses 3. The third null hypothesis and sub-hypotheses of this study submits that there is no statistically significant difference between the intraday effective return of mid-cap blend and world large stock equity-only faith-based investment funds and benchmark funds that do not have a specific socially responsible investing agenda. To test this hypotheses, the intraday return yield based on the daily NAV was calculated between the sub-divided groups (mid-cap and world large stock) of equity-only faith-based investment funds and their identified benchmark funds. A statistical analysis compared the intraday returns between the equity-only faith-based investment funds and the returns of the identified benchmark index.

The intraday mean return and standard deviation for the period studied was also assessed and the Sharpe ratio calculated using the data of the compared funds. Further, Jensen's α will be calculated for the equity-only faith based funds using the intraday mean return of the benchmark index (R_m) and the intraday mean return of the equity-only faith based funds (R_e). The results of these performance measures are discussed below.

Small/mid-cap blend equity-only faith-based funds v. benchmark indexes. A total of seven small/mid-cap equity-only faith-based funds were compared to their respective benchmark index funds. In the absence of a prospectus-defined benchmark, the analyst-assigned benchmark identified in the Morningstar database was utilized in the comparative study. As each equity-only faith-based fund was compared to the identified benchmark, the descriptive statistics and analysis results are provided for each pairing.

Table 7

Small/mid-cap equity-only faith-based funds v. benchmark indexes

		<i>Fund Statistics</i>				<i>Index Statistics</i>				
Fund Name	Benchmark Index	Mean (%)	Standard Deviation	Skewness	Kurtosis	Mean (%)	Standard Deviation	Skewness	Kurtosis	Test
AVEMX	S&P MidCap 400	0.0313	0.0076	-3.560	28.615	0.0313	0.0075	-0.938	3.5271	Wilcoxon
TRDFX	S&P 1000	0.0117	0.0088	-1.518	7.5437	0.0357	0.0078	-0.082	2.8113	Wilcoxon
GSCYX	Russell 2000	0.0181	0.0090	-1.427	6.8064	0.0395	0.0085	-0.672	1.9987	Wilcoxon
MMSCX	S&P SmallCap 600	-0.029	0.0145	-8.547	111.04	0.0416	0.0087	-0.574	1.5670	Wilcoxon
AASCX	S&P MidCap 400	0.0159	0.0091	-3.620	31.290	0.0332	0.0074	-0.938	3.5271	Wilcoxon
TLVAX	S&P 500	0.0242	0.0077	-2.704	20.063	0.0357	0.0077	-0.083	2.8113	Wilcoxon
TPLNX	Russell 2000	0.0154	0.0104	-2.932	23.650	0.0395	0.0085	-0.672	1.9987	Wilcoxon

Ave Maria value fund (AVEMX). Wilcoxon signed ranks tests were used to compare the intraday mean return yield of the mid-cap equity-only faith-based fund AVEMX and the S&P MidCap 400 TR index. Of the 273 days studied, the AVEMX fund had higher intraday return yields 152 days, the S&P MidCap 400 TR index had higher intraday return yields 121 days, and there were 0 ties. However, there was not a statistically-significant difference between the intraday mean return yields between AVEMX and the S&P MidCap 400 TR index, $N = 273$, $z = -1.285$, $p = 0.199$, $r = -0.0778$. See Appendix B for summarized results.

The intraday Sharpe ratio and Jensen's α for AVEMX and the S&P MidCap 400 TR index were calculated and assessed for the period studied (2/27/2017 – 3/30/2018 or 273 days). Based on the analysis provided in Appendix C, the S&P MidCap 400 TR index had a higher Sharpe ratio than the AVEMX fund, indicating a better return for the same risk. However, as the Sharpe ratio does not control for market variations, Jensen's α was computed by regressing the excess intraday risk-adjusted return yields of AVEMX on the excess risk-adjusted return yields of the S&P MidCap 400 TR index. The results indicate a beta of 75.4% and an intraday α of 0.005% for the mid-cap BRI ETF.

In summary, the Wilcoxon test for two related samples indicates there is no statistically significant difference between the intraday return yield of AVEMX and the S&P MidCap 400 TR index. As such, the null sub-hypothesis that states there is no statistically significant difference between the intraday effective return of mid-cap blend equity-only faith-based investment funds and benchmark funds that do not have a specific socially responsible investing agenda is not rejected. However, the higher Sharpe ratio of the studied benchmark index suggests a better return for the benchmark for the same risk. However, after controlling for

market movements, Jensen's α shows that AVEMX beat the intraday performance of the non-socially screened benchmark index.

Crossmark steward/small-mid cap enhanced index fund class A (TRDFX). Wilcoxon signed ranks tests were used to compare the intraday mean return yield of the small/mid-cap equity-only faith-based fund TRDFX and the S&P 1000. Of the 273 days studied, the TRDFX fund had higher intraday return yields 128 days, the S&P 1000 index had higher intraday return yields 145 days, and there were 0 ties. However, there was not a statistically-significant difference between the intraday mean return yields between TRDFX and the S&P 1000 index, $N = 273$, $z = -0.201$, $p = 0.841$, $r = -0.0121$. See Appendix B for summarized results.

The intraday Sharpe ratio and Jensen's α for TRDFX and the S&P 1000 index were calculated and assessed for the period studied (2/27/2017 – 3/30/2018 or 273 days). Based on the analysis provided in Appendix C, the S&P 1000 index had a higher Sharpe ratio than the TRDFX fund, indicating a better return for the same risk. As the Sharpe ratio does not control for market variations, Jensen's α was computed by regressing the excess intraday risk-adjusted return yields of TRDFX on the excess risk-adjusted return yields of the S&P 1000 index. The results indicate a beta of 99.143% and an intraday α of -0.0237% for TRDFX.

In summary, the Wilcoxon test for two related samples indicates there is no statistically significant difference between the intraday return yield of TRDFX and the S&P 1000 index. As such, the null sub-hypothesis that states there is no statistically significant difference between the intraday effective return of mid-cap blend equity-only faith-based investment funds and benchmark funds that do not have a specific socially responsible investing agenda is not rejected. However, the higher Sharpe ratio of the studied benchmark index suggests a better return for the benchmark for the same risk. Further, after controlling for market movements, Jensen's α

evidences a negative average excess return yield over the market premium of the equity-only faith-based fund.

GuideStone funds small cap equity fund (GSCYX). Wilcoxon signed ranks tests were used to compare the intraday mean return yield of the small cap equity-only faith-based fund GSCYX and the RUSSELL 2000. Of the 273 days studied, the GSCYX fund had higher intraday return yields 143 days, the RUSSELL 2000 index had higher intraday return yields 130 days, and there were 0 ties. However, there was not a statistically-significant difference between the intraday mean return yields between GSCYX and the RUSSELL 2000 index, $N = 273$, $z = -0.554$, $p = 0.580$, $r = -0.0335$. See Appendix B for summarized results.

The intraday Sharpe ratio and Jensen's α for GSCYX and the RUSSELL 2000 index were calculated and assessed for the period studied (2/27/2017 – 3/30/2018 or 273 days). Based on the analysis provided in Appendix C, the RUSSELL 2000 index had a higher Sharpe ratio than the GSCYX fund, indicating a better return for the same risk. As the Sharpe ratio does not control for market variations, Jensen's α was computed by regressing the excess intraday risk-adjusted return yields of GSCYX on the excess risk-adjusted return yields of the RUSSELL 2000 index. The results indicate a beta of 91.371% and an intraday α of -0.0183% for GSCYX.

In summary, the Wilcoxon test for two related samples indicates there is no statistically significant difference between the intraday return yield of GSCYX and the RUSSELL 2000 index. As such, the null sub-hypothesis that states there is no statistically significant difference between the intraday effective return of mid-cap blend equity-only faith-based investment funds and benchmark funds that do not have a specific socially responsible investing agenda is not rejected. However, the higher Sharpe ratio of the studied benchmark index suggests a better return for the benchmark for the same risk. Further, after controlling for market movements,

Jensen's α evidences a negative average excess return yield over the market premium of the equity-only faith-based fund.

Praxis small cap index fund (MMSCX). Wilcoxon signed ranks tests were used to compare the intraday mean return yield of the small cap equity-only faith-based fund MMSCX and the S&P SMALLCAP 600. Of the 273 days studied, the MMSCX fund had higher intraday return yields 141 days, the S&P SMALLCAP 600 index had higher intraday return yields 132 days, and there were 0 ties. However, there was not a statistically-significant difference between the intraday mean return yields between MMSCX and the S&P SMALLCAP 600 index, $N = 273$, $z = -0.291$, $p = 0.771$, $r = -0.018$. See Appendix B for summarized results.

The intraday Sharpe ratio and Jensen's α for MMSCX and the S&P SMALLCAP 600 index were calculated and assessed for the period studied (2/27/2017 – 3/30/2018 or 273 days). Based on the analysis provided in Appendix C, the S&P SMALLCAP 600 index had a higher Sharpe ratio than the MMSCX fund, indicating a better return for the same risk. As the Sharpe ratio does not control for market variations, Jensen's α was computed by regressing the excess intraday risk-adjusted return yields of MMSCX on the excess risk-adjusted return yields of the S&P SMALLCAP 600 index. The results indicate a beta of 95.785% and an intraday α of -0.069% for MMSCX.

In summary, the Wilcoxon test for two related samples indicates there is no statistically significant difference between the intraday return yield of MMSCX and the S&P SMALLCAP 600 index. As such, the null sub-hypothesis that states there is no statistically significant difference between the intraday effective return of mid-cap blend equity-only faith-based investment funds and benchmark funds that do not have a specific socially responsible investing agenda is not rejected. However, the higher Sharpe ratio of the studied benchmark index

suggests a better return for the benchmark for the same risk. Further, after controlling for market movements, Jensen's α evidences a negative average excess return yield over the market premium of the equity-only faith-based fund.

Thrivent mid cap stock fund class A (AASCX). Wilcoxon signed ranks tests were used to compare the intraday mean return yield of the mid-cap equity-only faith-based fund AASCX and the S&P MIDCAP 400. Of the 273 days studied, the AASCX fund had higher intraday return yields 132 days, the S&P MIDCAP 400 index had higher intraday return yields 141 days, and there were 0 ties. However, there was not a statistically-significant difference between the intraday mean return yields between AASCX and the S&P MIDCAP 400 index, $N = 273$, $z = -0.362$, $p = 0.717$, $r = -0.022$. See Appendix B for summarized results.

The intraday Sharpe ratio and Jensen's α for AASCX and the S&P MIDCAP 400 index were calculated and assessed for the period studied (2/27/2017 – 3/30/2018 or 273 days). Based on the analysis provided in Appendix C, the S&P MIDCAP 400 index had a higher Sharpe ratio than the AASCX fund, indicating a better return for the same risk. As the Sharpe ratio does not control for market variations, Jensen's α was computed by regressing the excess intraday risk-adjusted return yields of AASCX on the excess risk-adjusted return yields of the S&P MIDCAP 400 index. The results indicate a beta of 98.530% and an intraday α of -0.017% for AASCX.

In summary, the Wilcoxon test for two related samples indicates there is no statistically significant difference between the intraday return yield of AASCX and the S&P MIDCAP 400 index. As such, the null sub-hypothesis that states there is no statistically significant difference between the intraday effective return of mid-cap blend equity-only faith-based investment funds and benchmark funds that do not have a specific socially responsible investing agenda is not rejected. However, the higher Sharpe ratio of the studied benchmark index suggests a better

return for the benchmark for the same risk. Further, after controlling for market movements, Jensen's α evidences a negative average excess return yield over the market premium of the equity-only faith-based fund.

Timothy plan large/mid cap value fund (TLVAX). Wilcoxon signed ranks tests were used to compare the intraday mean return yield of the mid-cap equity-only faith-based fund TLVAX and the S&P 500. Of the 273 days studied, the TLVAX fund had higher intraday return yields 141 days, the S&P 500 index had higher intraday return yields 132 days, and there were 0 ties. However, there was not a statistically-significant difference between the intraday mean return yields between TLVAX and the S&P 500 index, $N = 273$, $z = -0.668$, $p = 0.504$, $r = -0.040$. See Appendix B for summarized results.

The intraday Sharpe ratio and Jensen's α for TLVAX and the S&P 500 index were calculated and assessed for the period studied (2/27/2017 – 3/30/2018 or 273 days). Based on the analysis provided in Appendix C, the S&P 500 index had a higher Sharpe ratio than the TLVAX fund, indicating a better return for the same risk. As the Sharpe ratio does not control for market variations, Jensen's α was computed by regressing the excess intraday risk-adjusted return yields of TLVAX on the excess risk-adjusted return yields of the S&P 500 index. The results indicate a beta of 80.868% and an intraday α of -0.005% for TLVAX.

In summary, the Wilcoxon test for two related samples indicates there is no statistically significant difference between the intraday return yield of TLVAX and the S&P 500 index. As such, the null sub-hypothesis that states there is no statistically significant difference between the intraday effective return of mid-cap blend equity-only faith-based investment funds and benchmark funds that do not have a specific socially responsible investing agenda is not rejected. However, the higher Sharpe ratio of the studied benchmark index suggests a better return for the

benchmark for the same risk. Further, after controlling for market movements, Jensen's α evidences a negative average excess return yield over the market premium of the equity-only faith-based fund.

Timothy plan small cap value fund (TPLNX). Wilcoxon signed ranks tests were used to compare the intraday mean return yield of the small cap equity-only faith-based fund TPLNX and the RUSSELL 2000. Of the 273 days studied, the TPLNX fund had higher intraday return yields 134 days, the RUSSELL 2000 index had higher intraday return yields 139 days, and there were 0 ties. However, there was not a statistically-significant difference between the intraday mean return yields between TPLNX and the RUSSELL 2000 index, $N = 273$, $z = -0.167$, $p = 0.868$, $r = -0.010$. See Appendix B for summarized results.

The intraday Sharpe ratio and Jensen's α for TPLNX and the RUSSELL 2000 index were calculated and assessed for the period studied (2/27/2017 – 3/30/2018 or 273 days). Based on the analysis provided in Appendix C, the RUSSELL 2000 index had a higher Sharpe ratio than the TPLNX fund, indicating a better return for the same risk. As the Sharpe ratio does not control for market variations, Jensen's α was computed by regressing the excess intraday risk-adjusted return yields of TPLNX on the excess risk-adjusted return yields of the RUSSELL 2000 index. The results indicate a beta of 100.41% and an intraday α of -0.024% for TPLNX.

In summary, the Wilcoxon test for two related samples indicates there is no statistically significant difference between the intraday return yield of TPLNX and the RUSSELL 2000 index. As such, the null sub-hypothesis that states there is no statistically significant difference between the intraday effective return of mid-cap blend equity-only faith-based investment funds and benchmark funds that do not have a specific socially responsible investing agenda is not rejected. However, the higher Sharpe ratio of the studied benchmark index suggests a better

return for the benchmark for the same risk. Further, after controlling for market movements, Jensen's α evidences a negative average excess return yield over the market premium of the equity-only faith-based fund.

World large stock equity-only faith-based funds v. benchmark indexes. A total of four world large stock equity-only faith-based funds were compared to their respective benchmark index funds. In the absence of a prospectus-defined benchmark, the analyst-assigned benchmark identified in the Morningstar database was utilized in the comparative study. As each equity-only faith-based fund was compared to the identified benchmark, the descriptive statistics and analysis results are provided for each pairing.

Table 8

World large stock equity-only faith-based funds v. benchmark indexes

Fund Name	Benchmark Index	<i>Fund Statistics</i>				<i>Index Statistics</i>				Test
		Mean (%)	Standard Deviation	Skewness	Kurtosis	Mean (%)	Standard Deviation	Skewness	Kurtosis	
AVEWX	S&P Global 1200	0.0272	0.0067	-1.2903	6.6813	0.0470	0.0055	-1.2884	6.6637	Wilcoxon
SGIDX	S&P 500	0.0309	0.0071	-2.2029	13.609	0.0357	0.0078	-0.8271	2.8113	Wilcoxon
GAGYX	Russell 3000	0.0426	0.0075	-2.3660	14.418	0.0135	0.0067	-1.0580	4.5856	Wilcoxon
AALGX	MSCI World Large Stock	0.0165	0.0085	-4.3363	39.193	0.0432	0.0055	-1.4519	7.5603	Wilcoxon

Ave Maria world equity fund (AVEWX). Wilcoxon signed ranks tests were used to compare the intraday mean return yield of the world large stock equity-only faith-based fund AVEWX and the S&P GLOBAL 1200. Of the 273 days studied, the AVEWX fund had higher intraday return yields 137 days, the S&P GLOBAL 1200 index had higher intraday return yields 136 days, and there were 0 ties. However, there was not a statistically-significant difference between the intraday mean return yields between AVEWX and the S&P GLOBAL 1200 index, $N = 273$, $z = -1.026$, $p = 0.305$, $r = -0.062$. See Appendix B for summarized results.

The intraday Sharpe ratio and Jensen's α for AVEWX and the S&P GLOBAL 1200 index were calculated and assessed for the period studied (2/27/2017 – 3/30/2018 or 273 days). Based on the analysis provided in Appendix C, the S&P GLOBAL 1200 index had a higher Sharpe ratio than the AVEWX fund, indicating a better return for the same risk. As the Sharpe ratio does not control for market variations, Jensen's α was computed by regressing the excess intraday risk-adjusted return yields of AVEWX on the excess risk-adjusted return yields of the S&P GLOBAL 1200 index. The results indicate a beta of 108.209% and an intraday α of -0.024% for AVEWX.

In summary, the Wilcoxon test for two related samples indicates there is no statistically significant difference between the intraday return yield of AVEWX and the S&P GLOBAL 1200 index. As such, the null sub-hypothesis that states there is no statistically significant difference between the intraday effective return of world large stock equity-only faith-based investment funds and benchmark funds that do not have a specific socially responsible investing agenda is not rejected. However, the higher Sharpe ratio of the studied benchmark index suggests a better return for the benchmark for the same risk. Further, after controlling for market movements,

Jensen's α evidences a negative average excess return yield over the market premium of the equity-only faith-based fund.

Crossmark steward global equity income fund class A (SGIDX). Wilcoxon signed ranks tests were used to compare the intraday mean return yield of the world large stock equity-only faith-based fund SGIDX and the S&P 500 TR index. Of the 273 days studied, the SGIDX fund had higher intraday return yields 150 days, the S&P 500 TR index had higher intraday return yields 123 days, and there were 0 ties. However, there was not a statistically-significant difference between the intraday mean return yields between SGIDX and the S&P 500 TR index, $N = 273$, $z = -1.009$, $p = 0.313$, $r = -0.0610$. See Appendix B for summarized results.

The intraday Sharpe ratio and Jensen's α for SGIDX and the S&P 500 TR index were calculated and assessed for the period studied (2/27/2017 – 3/30/2018 or 273 days). Based on the analysis provided in Appendix C, the S&P 500 TR index had a higher Sharpe ratio than the SGIDX fund, indicating a better return for the same risk. However, as the Sharpe ratio does not control for market variations, Jensen's α was computed by regressing the excess intraday risk-adjusted return yields of SGIDX on the excess risk-adjusted return yields of the S&P 500 TR index. The results indicate a beta of 66.33% and an intraday α of 0.006% for the mid-cap BRI ETF.

In summary, the Wilcoxon test for two related samples indicates there is no statistically significant difference between the intraday return yield of SGIDX and the S&P 500 TR index. As such, the null sub-hypothesis that states there is no statistically significant difference between the intraday effective return of world large stock equity-only faith-based investment funds and benchmark funds that do not have a specific socially responsible investing agenda is not rejected. However, the higher Sharpe ratio of the studied benchmark index suggests a better return for the

benchmark for the same risk. However, after controlling for market movements, Jensen's α shows that SGIDX beat the intraday return yield performance of the non-socially screened benchmark index.

GuideStone funds aggressive allocation fund (GAGYX). Wilcoxon signed ranks tests were used to compare the intraday mean return yield of the world large stock equity-only faith-based fund GAGYX and the Russell 3000 index. Of the 273 days studied, GAGYX had higher intraday return yields 160 days, the Russell Mid Cap TR index had higher intraday return yields 113 days, and there were 0 ties. This difference indicating higher intraday return yields is statistically significant, $N = 273$, $z = -3.144$, $p = 0.002$, $r = -0.19$, a small to medium effect size according to Morgan et al. (2013). See Appendix B for summarized results.

The intraday Sharpe ratio and Jensen's α for GAGYX and Russell 3000 index were calculated and assessed for the period studied (2/27/2017 – 3/30/2018 or 273 days). Based on the analysis provided in Appendix C, GAGYX had a higher Sharpe ratio than the non-socially screened benchmark index, indicating a better return for the same risk. However, as the Sharpe ratio does not control for market variations, Jensen's α was computed by regressing the excess intraday risk-adjusted return yields of the world large stock equity-only faith-based fund on the excess risk-adjusted return yields of the Russell 3000 index. The results indicate a beta of 84.867% and an intraday α of 0.031% over the benchmark index.

In summary, the Wilcoxon test for two related samples indicates there is a statistically significant difference between the intraday return yield of GAGYX and the Russell 3000 index. As such, the null sub-hypothesis that states there is no statistically significant difference between the intraday effective return of mid-cap blend BRI ETFs and their benchmark funds that do not have a specific socially responsible investing agenda is rejected for comparative grouping.

Further, the higher Sharpe ratio of GAGYX suggests a better return for the same risk. Similarly, after controlling for market movements, Jensen's α shows that GAGYX beat the performance of the non-socially screened benchmark index.

Thrivent large cap stock A (AALGX). Wilcoxon signed ranks tests were used to compare the intraday mean return yield of the world large stock equity-only faith-based fund AALGX and the MSCI WORLD LARGE STOCK. Of the 273 days studied, the AALGX fund had higher intraday return yields 136 days, the MSCI WORLD LARGE STOCK index had higher intraday return yields 137 days, and there were 0 ties. However, there was not a statistically-significant difference between the intraday mean return yields between AALGX and the MSCI WORLD LARGE STOCK index, $N = 273$, $z = -0.490$, $p = 0.624$, $r = -0.030$. See Appendix B for summarized results.

The intraday Sharpe ratio and Jensen's α for AALGX and the MSCI WORLD LARGE STOCK index were calculated and assessed for the period studied (2/27/2017 – 3/30/2018 or 273 days). Based on the analysis provided in Appendix C, the MSCI WORLD LARGE STOCK index had a higher Sharpe ratio than the AALGX fund, indicating a better return for the same risk. As the Sharpe ratio does not control for market variations, Jensen's α was computed by regressing the excess intraday risk-adjusted return yields of AALGX on the excess risk-adjusted return yields of the MSCI WORLD LARGE STOCK index. The results indicate a beta of 119.211% and an intraday α of -0.0344% for AALGX.

In summary, the Wilcoxon test for two related samples indicates there is no statistically significant difference between the intraday return yield of AALGX and the MSCI WORLD LARGE STOCK index. As such, the null sub-hypothesis that states there is no statistically significant difference between the intraday effective return of world large stock equity-only

faith-based investment funds and benchmark funds that do not have a specific socially responsible investing agenda is not rejected. However, the higher Sharpe ratio of the studied benchmark index suggests a better return for the benchmark for the same risk. Further, after controlling for market movements, Jensen's α evidences a negative average excess return yield over the market premium of the equity-only faith-based fund.

Relationship of hypotheses to research questions. Each research question is presented below. The above results of each hypothesis and sub-hypotheses will be linked back to the associated research question. In doing so, the conclusions presented indicate the research questions have been appropriately addressed.

Research Question 1. Are the intraday effective returns of BRI ETFs equivalent to other equity-only faith-based investment funds (e.g., mutual funds)? The first null hypothesis and sub-hypotheses propose there is no statistically significant difference between the intraday effective return of BRI ETFs and other equity-only faith-based socially responsible investment funds for the mid-cap blend and world large stock categories. To test this hypothesis, the intraday return yield based on the daily NAV was calculated between the sub-divided groups (mid-cap and world large stock) of BRI ETFs and equity-only faith-based socially responsible investment funds. Descriptive statistics were reviewed, indicating a non-normal distribution, which required a non-parametric Wilcoxon two related samples test to be performed. This statistical analysis is appropriate given the number of independent variables, type of dependent variables, and comparison within the independent variable (Morgan et al., 2013).

The intraday risk-adjusted return of the mid-cap BRI ETF was compared to the intraday risk-adjusted returns of the seven small/mid-cap returns of the equity-only faith-based investment funds. The intraday risk-adjusted return of the world large stock BRI ETF was

compared to the intraday risk-adjusted returns of four world large stock returns of the equity-only faith-based investment funds. For risk-free rate proxies, the three-month US Treasury Bill rates were pulled from the Federal Reserve Bank of St. Louis (Federal Reserve Bank of St. Louis, 2018). Risk-free rates were pulled for the period studied, averaged, and divided by 360 to determine the average daily rate. Thus, the risk-adjusted return yields for each fund and index were calculated by subtracting the average daily risk-free rate from the intraday NAV return yields. The same process was followed for the world large stock category with the one world large stock BRI ETF compared to the mean returns of the four world large stock equity-only faith-based investment funds.

The intraday mean return and intraday standard deviation for the period studied (2/27/2017 – 3/30/2018 or 273 days) were also assessed and the Sharpe ratio calculated using the data of the compared funds. Further, Jensen's α was calculated for the BRI ETFs using the intraday mean return yields of the group of mid-cap and world large stock equity-only faith based funds (R_{af}) and the intraday mean return yields of the BRI ETFs (R_e). These two ratios are widely used by practitioners to assess the performance of funds and portfolios (Bidisha et al., 2017). The incorporation of these additional performance measures allows for a more robust analysis of fund performance, providing more insight and application considerations for the industry.

There was not a statistically-significant difference between the intraday mean return yields between the mid-cap BRI ETF and the group of mid-cap equity only faith-based investment funds, $N = 273$, $z = -1.292$, $p = 0.196$, $r = -0.078$. Further, there was not a statistically-significant difference between the intraday mean return yields between the world large stock BRI ETF and the group of world large stock equity only faith-based investment

funds, $N = 273$, $z = -0.311$, $p = 0.756$, $r = -0.019$. See Appendix B for summarized results. The results of the Sharpe ratio and Jensen's alpha between each grouping are discussed in the above section, as well as, presented Appendix C.

Research Question 2. Are the effective returns of BRI ETFs equivalent to benchmark funds that do not have a specific socially responsible investing agenda? To address this question, the second null hypothesis and sub-hypotheses of this study purports there is no statistically significant difference between the intraday effective return of mid-cap and world large stock BRI ETFs and benchmark funds that do not have a specific socially responsible investing agenda. To test this hypothesis, the intraday return yield based on the daily NAV was between the subdivided groups (mid-cap and world large stock) of BRI ETFs and their identified benchmark funds. Descriptive statistics were reviewed, indicating a non-normal distribution, which required a non-parametric Wilcoxon two related samples test to be performed. This statistical analysis is appropriate given the number of independent variables, type of dependent variables, and comparison within the independent variable (Morgan et al., 2013).

The intraday risk-adjusted returns of the mid-cap and world large stock BRI ETFs were compared to the intraday risk-adjusted returns of their respective benchmark indexes with no socially responsible agenda. For risk-free rate proxies, the three-month US Treasury Bill rates were pulled from the Federal Reserve Bank of St. Louis (Federal Reserve Bank of St. Louis, 2018). Risk-free rates were pulled for the period studied, averaged, and divided by 360 to determine the average daily rate. Thus, the risk-adjusted return yields for each fund and index were calculated by subtracting the average daily risk-free rate from the intraday NAV return yields.

The tests revealed there was not a statistically-significant difference between the intraday mean return yields between the mid-cap BRI ETF and the Russell Mid Cap TR index, $N = 273$, $z = -1.332$, $p = 0.740$, $r = -0.020$. Further, there was not a statistically-significant difference between the intraday mean return yields between the world large stock BRI ETF and the MSCI ACWI index, $N = 273$, $z = -0.200$, $p = 0.841$, $r = -0.012$. See Appendix B for summarized results.

The intraday mean return and standard deviation for the period studied were also assessed and the Sharpe ratio calculated using the data of the compared funds. Further, Jensen's α was calculated for the BRI ETFs using the intraday mean return of the benchmark index (R_m) and the intraday mean return of the BRI ETFs (R_e). The results of these performance measures were discussed in the above sections and are provided in Appendix C.

Research Question 3. Are the effective returns of equity-only faith-based investment funds equivalent to benchmark funds that do not have a specific socially responsible investing agenda? The third null hypothesis and sub-hypotheses of this study submits there is no statistically significant difference between the intraday effective return of mid-cap blend and world large stock equity-only faith-based investment funds and benchmark funds that do not have a specific socially responsible investing agenda. To test this hypotheses, the intraday return yield based on the daily NAV will be calculated between the sub-divided groups (mid-cap and world large stock) of equity-only faith-based investment funds and their identified benchmark funds. Descriptive statistics were reviewed, indicating a non-normal distribution, which required a non-parametric Wilcoxon two related samples test to be performed. This statistical analysis is appropriate given the number of independent variables, type of dependent variables, and comparison within the independent variable (Morgan et al., 2013).

The intraday risk-adjusted returns of the equity-only faith-based investment funds were compared to the intraday risk-adjusted returns of their respective benchmark indexes with no socially responsible agenda. For risk-free rate proxies, the three-month US Treasury Bill rates were pulled from the Federal Reserve Bank of St. Louis (Federal Reserve Bank of St. Louis, 2018). Risk-free rates were pulled for the period studied, averaged, and divided by 360 to determine the average daily rate. Thus, the risk-adjusted return yields for each fund and index were calculated by subtracting the average daily risk-free rate from the intraday NAV return yields.

The results of the Wilcoxon two related samples test for the intraday risk-adjusted return yields of the 11 equity-only faith-based investment funds, as compared to their benchmark indexes, are presented in Appendix B. Only one equity-only faith-based investment fund showed a statistically-significant difference in performance. Of the 273 days studied, GAGYX had higher intraday return yields 160 days, the Russell Mid Cap TR index had higher intraday return yields 113 days, and there were 0 ties. This difference indicating higher intraday return yields is statistically significant, $N = 273$, $z = -3.144$, $p = 0.002$, $r = -0.19$, a small to medium effect size according to Morgan et al. (2013).

The intraday mean return and standard deviation for the period studied were also assessed and the Sharpe ratio calculated using the data of the compared funds. Further, Jensen's α was calculated for the equity-only faith-based investment funds using the annual mean return of the benchmark index (R_m) and the annual mean return of the equity-only faith-based investment funds (R_e). The results are discussed in the above sections and also presented in Appendix C.

Summary of the findings. As previously discussed, the results of H1 and H2 indicate no statistically-significant difference between the intraday risk-adjusted return yields of the mid-cap

and world large stock BRI ETFs and their respective benchmark indexes or the average intraday risk-adjusted return yield of their category grouping of equity-only faith-based investment funds. However, the Sharpe ratio (practitioner tool to judge the risk-return profile of a fund) and Jensen's α (signifies excess returns over expected returns given the level of market risk for its corresponding market index) were also utilized as performance proxies. It is worth noting that while not statistically significant, the mid-cap BRI ETF (ISMD) had both a higher intraday Sharpe ratio and Jensen's α than the small/mid-cap equity-only faith-based funds and its respective benchmark index with no socially responsible investing agenda. This finding is consistent with Bidisha et al. (2017) who concluded that the "majority of CSR-oriented ETFs performed as well as their representative market index" (p. 1653). Jensen's α also revealed that five of the 11 ETFs included in the study beat their representative market indexes significantly, while most of the others did "at least well" (Bidisha et al., 2017, p. 1653).

Similarly, the majority of groupings under H_3 indicated no statistically significant difference between intraday risk-adjusted return yields and their respective benchmark indexes. This is consistent with previous research where authors concluded that screening a portfolio will create neither a gain nor loss on a typical socially responsible fund (Humphrey & Tan, 2014). However, one world large stock equity-only faith-based fund (GAGYX) had a statistically significant difference from the Russell 3000 index. Further, the Sharpe ratio and Jensen's α for the fund were also higher than the benchmark. This is consistent with previous research that found socially responsible mutual funds outperformed conventional funds (Gil-Bazo, 2010).

Applications to Professional Practice

This dissertation research study was designed to contribute to the growing body of knowledge regarding the efficacy of a recently popular investment vehicle (ETFs; Ben-David et

al., 2017) and the impact of values-based investment strategies on performance (Bidisha et al., 2017). Specifically, this research examined the risk-adjusted returns of biblically based investment funds, a subset of the larger category of socially responsible investment funds. Previous research has focused primarily on mutual funds; but as ETFs continue to grow in utilization, a gap in academic research surrounding BRI ETFs is apparent.

The need for such studies is evident, even if not yet fully realized by practitioners. The continued growing of the financial planning industry evidences the incorporation of millennials into an advisors client base. However, recent studies have found that social responsibility and values-based investing is paramount to investment intrigue for younger clients (Anderson et al., 2015; Huang, 2016). Further, in a principal-agent relationship, the agent is required to act on the behalf of the principal in a given matter (Shapiro, 2005). Risks are inherent within the process, but can be reduced when the agent intentionally focuses on meeting the desires and interest of the principal (Tan & Lee, 2015). Specifically, in this niche type of investing, a dualistic approach by the agent is required to satisfy both the interest and needs of the client in a creatively appropriate manner, while also clearly communicating the pertinent outcome information. Further, the modern portfolio theory requires the risk of a portfolio be mitigated by the achieved rate of return and that the option with the lower risk be chosen over one with higher risk if both provide equivalent returns (Elton et al., 2014).

In light of these two foundation theories, examining the performance of investment funds that provide both quantitative and qualitative differentiations for the client is proprietary in nature. In addition to academic enrichment, the findings were intended to be applicable to individual investors and current professionals that seek to align their Christian beliefs with investment portfolios. The remainder of this section offers two significant applications to

professional practice, SRI/BRI investment initiatives and ETF utilization, based on the nature and results of this study. Additionally, the inherent biblical implications of this research are exposed.

SRI/BRI investment initiatives. As the financial planning industry continues its rapid growth (IBIS World, 2016), socially responsible investment strategies have seemingly grown in tandem (Anderson et al., 2015; Huang, 2016; Lettau & Madhavan, 2018). While some authors conclude that investors must be willing to realize a slightly lower return on investments in order to appease their moral conscience (Junkus & Berry, 2015), other research would suggest that SRI mutual funds performed better than their examined peers or benchmark (Bilbao-Terol et al., 2017; Gil-Bazo, 2010; Ito et al., 2013). Recent research regarding the efficacy of Christian-based mutual funds has indicated significant underperformance of such funds (Stultz, 2016). On the other hand, the performance of sin portfolios has also been examined with results varied based on the period studied (Hong & Kacperczyk, 2009; Lobe & Walkshäusl, 2016; Richey, 2017). The combined results of the studies have been mixed, with no studies specially targeting BRI ETFs versus benchmark indexes that have no socially responsible agenda.

As BRI falls under the umbrella of SRI (Lai, 2012), this research builds on previous academic studies that indicate the equivalent performance of CSR-oriented ETFs as compared to their benchmark index (Bidisha et al., 2017), as well as, the efficacy of morality driven investment funds (Beer et al., 2014; Peifer, 2011; Stultz, 2016). The second and third hypotheses of this study address the return realization of BRI ETFs and other equity-only faith-based funds as compared to their benchmark indexes with no socially responsible investment agenda. The results showed no statistically significant difference between BRI ETFs and the majority of the other equity-only faith-based investment funds. Further, the results showed no statistically

significant difference between BRI ETFs and their benchmark indexes during the period examined. Additionally, only one of the equity-only faith-based investment funds statistically outperformed its benchmark index, with a higher Sharpe ratio than the benchmark and positive Jensen's alpha. These findings support previous research that values-based investing is not necessarily associated with lower returns on investment (Beer et al., 2014; Muñoz et al., 2014; Nofsinger & Varma, 2014; Ortas et al., 2013). It is noted that the US stock market in 2017 had overall positive returns (Dow Jones Institutional News, 2017; Everington, 2017); thus, the results of this study may be different during periods of market concentration or market crisis. However, for the individual investor, the results indicate faith-based convictions can be aligned with an investment portfolio comprised of such holdings that perform similar to those that undergo no values-based screening methods.

This awareness further empowers investment managers to encourage and incorporate values based investing opportunities in the portfolios of clients that are so inclined. As the AICPA requires accounting professionals to be an expert on a wide range of financial issues (American Institute of Certified Public Accountants, 2018), advising clients on the best investments for financial resources, in light of their personal values, is an essential aspect of the role of agent. As such, understanding and providing the performance parameters of such morality aligned investment funds builds on the professional's expertise and value add to the client.

Utilization of ETFs. With the continued increase of ETF trading volume, the appeal of this specific type of investment fund has warranted additional inspection of historical performance, as compared to other investment vehicles (Arugaslan & Samant, 2014; Ben-David et al., 2017; Bidisha et al., 2017; Hodaszy, 2017; Hougan, 2014). The intrigue of ETFs is multi-

faceted as they include but are not limited to the following opportunities: diversity of firm-specific risk at a very low cost; instantaneous purchasing and selling and the ability to do so on margin; and a variety of buy or sell orders including market orders, limit orders, and stop orders (Arugaslan & Samant, 2014; Ben-David et al., 2017; Huang & Lin, 2011). While mutual funds have a longer history of performance, the main differences between mutual funds and ETFs are the type of convenience of trading, taxation efficiency, shareholder transaction fees, and management fees (Dorocáková, 2017). As it pertains to tax efficiency, ETFs are structured in such a way that allows investment gain avoidance, even when disposing of significant amounts of appreciated assets - a tax break that mutual fund investors and direct investors in securities are not allowed (Hodaszy, 2017). As previously mentioned, the corpus body of available information regarding the performance of ETFs is limited, with SRI/BRI ETF research scarce.

The first hypothesis examined the intraday risk-adjusted return yield of the mid-cap BRI ETF and the world large stock BRI ETF to the average of the intraday risk-adjusted return yield of their respective equity-only faith-based funds peer group. Building off of previous research that has explored the efficacy of Christian-based mutual funds (Stultz, 2016), the comparison was made between BRI ETFs and other equity-only faith-based investment funds rather than the broader scope of socially responsible mutual funds. Thus, this specific research question was targeting which investment vehicle the advisors should consider if they proposed an investment based on their client's religious orthodoxy. The NAV was used to calculate the intraday return yield for the period studied, which facilitates an examination net of fees and neutral comparisons to be made between actively managed portfolios and theoretical benchmark indexes. Thus, if this examination yields similar performance results, the additional trading costs (Lettau &

Madhavan, 2018) and taxable events (Bidisha et al., 2017) associated with mutual funds would be largely avoided if choosing to invest in ETFs.

The results indicated there was no statistically significant difference between the intraday risk-adjusted return performance of the BRI ETFs and the other equity-only faith-based funds. However, the mid-cap BRI ETF produced a higher intraday Sharpe ratio and intraday Jensen's alpha during the period studied, indicative outperformance for the period studied. As these two performance proxies evidence the risk-return profile of a fund and the excess returns over expected returns given the level of market risk for its corresponding market index, the results of this study suggest that the utilization of this investment vehicle can provide unique opportunities for the client, while also realizing no statistically significant difference in intraday returns. Armed with this knowledge, the individual investor can explore the alignment of personal convictions with his investment strategy without the compromise of financial performance. Similarly, the professional manager can more fully fulfill the role of agent by aligning both the quantitative and qualitative ideals of the client.

Biblical implications. The highest form of separation is espoused as a tenant of the Christian faith. Paul, a devout apostle of Christ, declares followers "chosen people, a royal priesthood, a holy nation, a people belonging to God" that they "may declare the praises of him, who called you out of a darkness into his wonderful light" (1 Peter 2:9, NIV). This separation is not only applicable to spiritual matters, but also vocational practices as work is not considered merely instrumental but rather highly valued by God (Revelli, 2017), the original Creator of work (Gen. 1:28, NIV). Thus, if truly understood and embraced, the Christian faith is not regarded as an empty set of religious rituals but a lens through which to view the world. It requires a renewed mind (Rom. 12:2, NIV) that encourages followers of Christ to "walk in a

manner worthy of the Lord and please him in every way” (Col. 1:10, NIV). Such a lifestyle is one in which excellence in knowledge is pursued (2 Cor. 8:7, NIV), discernment is abundant (Phil. 1:9-10, NIV), and skillful work is rewarded (Prov. 22:29, NIV). This research study encompassing a niche type of investment fund provides additional knowledge, discernment, and skill set for an investment manager as it allows the agent to better serve specific clients that morally align with screens applied to the BRI ETFs.

The provided research sheds light on investment funds targeting cash flow to companies with higher CSR initiatives that arguably enrich the community around them, as opposed to those with limited socially responsible agendas. This idea of public contribution over personal achievements is not only a pillar of the Christian faith (Phil. 2: 3, NIV), but also encouraged by authors that assert community flourishing and service is paramount to ROI considerations (Hardy, 1990; Van Duzer, 2010). As such, the results of this study builds on the discussion of both personal enrichment and community enhancement through the utilization of other equity-only faith-based investment funds and BRI ETFs that indicate statistically similar performance metrics over the period studied.

Finally, this study provides a creative alternative not previously considered, as defined as the “third way” by Van Duzer (2010, p. 119). Rather than accepting a uniform approach, perspectives are challenged and exploratory innovation encouraged to meet the changing needs of existing customers and the fresh demands of emerging clientele (Li et al., 2015). Similarly, these investment funds challenge tradition by ignoring the predetermined boundaries and consider outside alternatives to screening companies based on a set of predetermined standards.

Recommendations for Action

This applied research study seeks to provide clarity on the quantitative ramifications of utilizing an emerging investment vehicle, leveraging previous research that targeted the efficacy of Christian-based mutual funds. As academics begin to examine more closely the implications of ETF investment strategies, this study adds to the growing body of knowledge regarding values-based decision parameters versus ROI maximization. While a target audience for the results of the examined funds are individual investors, those providing investment counsel have a fiduciary responsibility to understand the potential impact of the inclusion of such niche type funds in a client's portfolio. As such, portfolio managers can incorporate the findings herein to justify biblically based portfolios, evidencing to the individual investor and regulatory authorities the assumed risks and evaluated historical performance of these stringently screened biblically responsible portfolios. The below section builds off of the above section of general application to provided recommended action steps for implementation.

SRI/BRI investment initiatives. As mentioned, this study builds on the corpus of academic knowledge available regarding SRI/BRI portfolios – a growing area of interest given the entrance of millennials into the investment arena. On an individual investor level, those that may be most impacted by the results of this study are emerging values based investors, as well as, individuals inclined to incorporate strongly-held religious beliefs, with an emphasis on those devout to biblically based theology. The findings should be incorporated in current financial literacy programs and disseminated to churches and other Christian-based organizations to educate and encourage their parishioners in stewardship opportunities that align with tenants of Christian theology. Knowledge of such investment vehicles is limited with an understanding of its performance and benefits minimal.

The unawareness of such niche type of investments is rampant even among practitioners. Thus, communication of the results of this study could be accomplished through academic journal publications of the summary of findings, as well as, non-academic publications that target the Christian community. The fund managers of these biblically responsible investments should be made aware of the study results to incorporate into their communication with their broader audience. In publishing these results, awareness of these funds could increase with professional development facilitators incorporating these findings in learning modules. In doing so, the targeted demographic of both advisor and investor could be reached.

ETF utilization. As previously mentioned, the appeal of ETFs continues to capture the industry due to a variety of reasons, which largely pertain to a reduction in transaction expenses (current cost savings) and elimination of taxable events (future cost savings). By the end of 2016, more than 30% of overall trading volume and more than 10% of the total market capitalization traded on US exchanges were ETFs (Ben-David et al., 2017). Thus, the efficacy of ETFs, as compared to other investment vehicles, must be considered.

As a research question associated with this study examined the intraday risk-adjusted returns of BRI ETFs and other equity-only faith-based funds, the underlying assumption is that a faith-based investment will be chosen. Therefore, the relevant consideration specific to this research question is related to which fund proves the most financially prudent. The results indicate that the BRI ETFs perform statistically similar to the average performance of the other equity-only faith-based funds included in the study, for both the mid-cap and world large stock categories. Thus, as research indicates that ETFs vary from mutual funds in the convenience of trading, taxation efficiency, shareholder transaction fees, and management fees (Dorocáková,

2017; Hodaszy, 2017; Hougan, 2014), the BRI ETF could prove a more tactical option than other equity-only faith-based investment funds.

Those most impacted by these results include the faith-based investors that are committed to values-based investing, but also seek the shrewdest method for cost savings purposes. Dissemination of these results could be in the form of published articles in academic journals, non-academic journals, and Christian literature with outlets to the broader Christian public. Practitioners currently incorporating these niche investments in predisposed client portfolios are also impacted by these results as the manager's investment advice could shift to suggesting a more tax efficient portfolio. As an agent with an obligation to act in the best interest of the principal, the investment manager should seek the most advantageous cost effective opportunities for the client, which may result in a shift in investment vehicle options. Investors could be made aware of the results of this study through academic and non-academic publishing materials that could be used by professional development professionals seeking to provide relevant trends in practice.

Recommendations for Further Study

The first, and perhaps the most obvious, consideration is the limited data available for analysis. The period studied was restricted to the inception date of these niche type funds in February 2017. As longitudinal data are superior for authoritative guidance and preferred by established economists, the focus on the intraday return yield between funds provided a larger sample size ($n = 273$ days) than a monthly or yearly analysis would have yielded. Arguably, even this time frame is a much shorter span than what is preferred. However, the combination of the growth of values-based investment intrigue, an emerging phenomenon of biblically responsible investing, and limited scholarly research warrants initial investigation into the risk-

reward of such funds, despite the limitation of available data. Thus, an opportunity is presented for future studies to be conducted in the coming years with a larger population and sample size of elongated durations, further enhancing the likelihood that the resulting performance indicators are truly indicative of potential return capabilities of BRI portfolios.

Secondly, the security type included in this study could be expanded. Three types of investments were included in this dissertation research study: BRI ETFs, other equity-only faith-based investment funds, and benchmark indexes with no socially responsible agenda.

Comparisons of the intraday return yields were made between each pairing – BRI ETFs versus other equity-only faith-based investment funds, BRI ETFs versus benchmark indexes, and other equity-only faith-based investment funds versus benchmark indexes. As such, there are several exploratory avenues to recommend for further investigation. For example, the performance of bond funds and mixed allocations as compared to the broader markets could be could yield intriguing results. Further, as several authors have explored the performance of SRI mutual funds as compared to religious funds, CSR-oriented ETFs as compared to BRI ETFs is an uncharted area of research.

Thirdly, the examination as to the drivers of the efficacy of ETFs is of growing interest in academia as this type of investment vehicle continues to increase in utilization. ETFs are employed by both passive and active managers because of their inherent benefits. As such, correlations between the characteristics of ETFs and performance can be further examined to more fully consider which qualities largely effect the performance of the investment funds and their appeal to the broader market. As BRI ETFs undergo a stringent screening process, sector bias could be examined for impact on fund performance. Further, market cap versus equal weighting the holdings within the ETF is an area that could manifest significant findings.

Reflections

This research process has truly been one of exploration and growth in a field to which I had just recently been exposed. The professional career as a CPA that led me to this terminal degree largely dealt with the financial analysis of large corporations. In that chosen profession, financial and investment implications were evaluated by their impact on the corporation as a whole, with the individual investor a secondary consideration, if any. This created an ambient perspective exclusive to a biblical worldview that was subsequently challenged and shifted once beginning the doctoral program.

While pursuing this degree, professional opportunities shifted, providing an avenue of insight into the investment management arena. This required a shift from a corporate sustainability to an investor enrichment perspective that pressed the requirement of CPAs to consider all areas of financial concern. Reaffirmed in the biblical principles of using work to flourish the community (Phil. 2:3) and pursue excellence in knowledge (2 Cor. 8:7), I was intrigued by the concept of applying biblical principles to screen companies considered for inclusion in investment funds. This screened investment vehicle was specifically crafted by Inspire out of Hollister, CA – the first investment company to marry these specific screening techniques with ETFs. Preliminary research unearthed studies exploring the efficacy of Christian-based mutual funds; but, given their recent development, no research regarding the effective return of BRI ETFs had yet been published.

Current academic literature evidences mixed conclusions on the financial return of investment funds that have been screened based on religious values. My original thought was that these BRI ETFs, as well as the other equity-only faith-based funds would underperform as compared to the broader market given the potential sector bias and potential increase in

concentrated risk in certain geographic areas. I did, however, believe they would perform equally or better than the other equity-only faith-based investment funds given the historically lower expense ratios (as reflected in their NAV).

The results of this study were slightly surprising as there was no statistically significant difference between the intraday risk-adjusted return yields of the mid-cap and world large stock BRI ETFs and their respective benchmark indexes or the average intraday risk-adjusted return yield of their category grouping of equity-only faith-based investment funds. The two additional performance proxies, the Sharpe ratio and Jensen's α , revealed that the mid-cap BRI ETF (ISMD) had both a higher intraday Sharpe ratio and Jensen's α than the small/mid-cap equity-only faith-based funds and its respective benchmark index with no socially responsible investing agenda. Thus further supported my preliminary assumption that the BRI ETF has comparable, if not better, performance to the average performance of the relevant equity-only faith-based investment fund peer group.

Another result of interest was that one world large stock equity-only faith-based fund (GAGYX) had a statistically significant difference in the intraday return yield, higher Sharpe ratio, and higher Jensen's alpha than that of its relative benchmark index. This finding supports previous research conclusions that assert values based investing does not always imply a lower return realization. Because of my anticipated findings, my research was less likely subject to confirmation bias. However, the utilization of historical data, collected from multiple sources over the studied period for both examined funds and their respective benchmarks, helped minimize the potential bias that can be easily introduced into the research process.

While the results of this study were surprising, the potential impact is exciting as believers can have a reasonable foundation to support further investigation into values-based

investment. Given their recent launch as an investment vehicle, the period studied is shorter than the ideal range. While the examination of the intraday return yield provides a deeper dive of exploration of the efficacy of the funds, future studies could examine longer performance periods for additional academic contribution.

It is worth noting that biblical teachings extend beyond religious disciplines by encouraging excellence in all manners of conduct for believers.

In everything set them an example by doing what is good. In your teaching show integrity, seriousness, and soundness of speech that cannot be condemned, so that those who oppose you may be ashamed because they have nothing bad to say about us. (Titus 2:7-8, NIV)

The results of this study provide an opportunity for believers to set an example of doing good while providing a sound argument supported by academic research for ensuing decisions. Such conclusions were not anticipated at the beginning of this journey, but a rewarding finding of such research rigor.

Summary and Study Conclusions

The intention of this dissertation research study was to examine the intraday return yield, calculated from the intraday NAV variations, of BRI ETFs as compared to their relevant peer group of other equity-only faith-based funds and their respective benchmark indexes. A total of 23 investment funds were included in the final sample selection: (a) two BRI ETFs, (b) four US small blend equity-only faith-based funds, (c) three US mid-cap blend equity-only faith-based funds, (d) four world large stock equity-only faith based funds, and (e) 10 benchmark index funds. The Sharpe ratio and Jensen's alpha, two ratios widely used by practitioners to assess the performance of funds, were calculated and compared for each pairing. The incorporation of

these additional performance measures allows for a more robust analysis of fund performance, providing more insight and application considerations for the industry.

The evaluation of the intraday risk-adjusted returns indicated no statistically significant differences in the intraday performance between all funds examined. However, while not statistically different, the mid-cap BRI ETF outperformed the average intraday return of its relevant peer group while also yielding a higher intraday Sharpe ratio and Jensen's alpha. Further, one equity-only faith-based investment fund had a statistically significant higher returns than its respective non-socially screened benchmark index. This research suggests that practitioners can propose a morality-driven investment portfolio without sacrificing financial returns. As this study appears to be the first of its kind in combining faith-based values with ETFs, it intends to reduce an information gap in current academic literature. It seeks to provide pivotal considerations that may embolden individual investors and advisors to explore faith-based investing without fearing the sacrifice of net returns. Such confidence and opportunity allows believers to apply biblical truth in all applicable areas – sacred or secular.

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Appendix A: Table 9 - Equity-Only Faith-Based Investment Fund and Benchmark Sample

Fund Name	Inception Date	Category	Benchmark
Ave Maria Value Fund (AVEMX)	5/1/2001	US Fund Mid-Cap Blend	S&P MidCap 400 TR
Ave Maria World Equity Fund (AVEWX)	04/30/2010	World Large Stock	S&P Global 1200 TR
Crossmark Steward Global Equity Income Fund Class A (SGIDX)	04/03/2008	World Large Stock	S&P 500 TR
Crossmark Steward/Small-Mid Cap Enhanced Index Fund Class A (TRDFX)	01/31/1952	Small Blend	S&P 1000 TR
GuideStone Funds Aggressive Allocation Fund (GAGYX)	11/23/2015	World Large Stock	Russell 3000 TR
GuideStone Funds Small Cap Equity Fund (GSCYX)	08/27/2001	Small Blend	Russell 2000 TR
Praxis Small Cap Index Fund (MMSX)	05/01/2007	Small Blend	S&P SmallCap 600 TR
Thrivent Large Cap Stock A (AALGX)	07/16/1987	World Large Stock	MSCI World Large Stock NR
Thrivent Mid Cap Stock Fund Class A (AASCX)	06/30/1993	US Fund Mid-Cap Blend	S&P MidCap 400 TR
Timothy Plan Large/Mid Cap Value Fund (TLVAX)	07/14/1999	US Fund Mid-Cap Blend	S&P 500 TR
Timothy Plan Small Cap Value Fund (TPLNX)	03/24/1994	Small Blend	Russell 2000 TR

Appendix B: Table 10 - Wilcoxon Two Related Samples Statistics

Fund Name	Category	Compared Funds	N	z	p-value	r
ISMD	US Mid-Cap Blend	US Small/Mid Cap Other Equity-Only Faith-Based Funds	273	-1.29	0.196	-0.08
BLES	World Large Stock	World Large Stock Other Equity-Only Faith-Based Funds	273	-0.31	0.756	-0.02
ISMD	US Mid-Cap Blend	Russell Mid Cap TR	273	-1.33	0.740	-0.02
BLES	World Large Stock	MSCI ACWI NR	273	-0.20	0.841	-0.01
AVEMX	US Mid-Cap Blend	S&P MidCap 400	273	-1.29	0.199	-0.08
TRDFX	US Small Blend	S&P 1000	273	-0.20	0.841	-0.01
GSCYX	US Small Blend	Russell 2000	273	-0.55	0.580	-0.03
MMSCX	US Small Blend	S&P SmallCap 600	273	-0.29	0.771	-0.01
AASCX	US Mid-Cap Blend	S&P MidCap 400	273	-0.36	0.717	-0.02
TLVAX	US Mid-Cap Blend	S&P 500	273	-0.67	0.504	-0.04
TPLNX	US Small Blend	Russell 2000	273	-0.17	0.868	-0.01
AVEWX	World Large Stock	S&P Global 1200	273	-1.03	0.305	-0.06
SGIDX	World Large Stock	S&P 500	273	-1.01	0.313	-0.06
GAGYX	World Large Stock	Russell 3000	273	-3.14	0.002	-0.19

Fund Name	Category	Compared Funds	N	z	p-value	r
AALGX	World Large Stock	MSCI World Large Stock	273	-0.49	0.624	-0.03

Appendix C: Table 11 - Sharpe Ratio & Jensen's Alpha

Fund Name	Category	Compared Funds	R_e , %	R_{af} , %	R_f , %	σ_e	σ_{af}	S_e	S_{af} or S_m	β (%)	α (%)	R^2
ISMD	US Mid-Cap Blend	US Small/Mid Cap Other Equity-Only Faith Based Funds	0.0209	0.0125	0.0031	0.0084	0.0079	0.0218	0.0118	93.856	0.009	0.8377
BLES	World Large Stock	World Large Stock Other Equity-Only Faith-Based Funds	0.0485	0.0293	0.0031	0.0060	0.0068	0.0754	0.0383	99.383	-0.091	0.7672
ISMD	US Mid-Cap Blend	Russell Mid Cap	0.0209	0.0135	0.0031	0.0081	0.0067	0.02183	0.0154	110.70	0.006	0.8313
BLES	World Large Stock	MSCI ACWI	0.0485	0.0485	0.0031	0.0060	0.0053	0.0755	0.0857	103.10	-0.001	0.8234
AVE MX	US Mid-Cap Blend	S&P MidCap 400	0.0313	0.0332	0.0031	0.0076	0.0075	0.0372	0.0401	75.409	0.005	0.5542
TRDF X	US Small Blend	S&P 1000	0.0117	0.0357	0.0031	0.0088	0.0078	0.0097	0.0419	99.143	-0.024	0.7599
GSCY X	US Small Blend	Russell 2000	0.0181	0.0395	0.0031	0.0090	0.0085	0.0166	0.0427	91.371	-0.018	0.7439

Fund Name	Category	Compared Funds	R_e , %	R_{af} , %	R_f , %	σ_e	σ_{af}	S_e	$S_{af \text{ or } S_m}$	β (%)	α (%)	R^2
MMS CX	US Small Blend	S&P SmallCap 600	-0.029	0.0416	0.0031	0.0145	0.0087	-0.0225	0.0441	95.785	-0.069	0.3332
AASC X	US Mid-Cap Blend	S&P MidCap 400	0.0159	0.0332	0.0031	0.0091	0.0075	0.0141	0.0402	98.530	-0.017	0.6618
TLVA X	US Mid-Cap Blend	S&P 500	0.0242	0.0357	0.0031	0.0077	0.0078	0.0275	0.0419	80.868	-0.005	0.6672
TPLN X	US Small Blend	Russell 2000	0.0154	0.0395	0.0031	0.0104	0.0085	0.0118	0.0427	100.41	-0.024	0.6778
AVE WX	World Large Stock	S&P Global 1200	0.0272	0.0470	0.0031	0.0067	0.0055	0.0357	0.0794	108.21	-0.024	0.7912
SGID X	World Large Stock	S&P 500	0.0309	0.0357	0.0031	0.0071	0.0078	0.0390	0.0419	66.333	0.006	0.5233
GAG YX	World Large Stock	Russell 3000	0.0426	0.0135	0.0031	0.0075	0.0067	0.0526	0.0154	84.867	0.031	0.5749
AAL GX	World Large Stock	MSCI World Large Stock	0.0165	0.0432	0.0031	0.0085	0.0055	0.0157	0.0728	119.21	-0.034	0.5952