Stockholm University

Children's Social Emotional Competence

Advances in assessment and practice

Sarah Thomas

Doctoral Thesis in Psychology at Stockholm University, Sweden 2022

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Sarah Thomas

Academic dissertation for the Degree of Doctor of Philosophy in Psychology at Stockholm University to be publicly defended on Thursday 15 December 2022 at 13.00 in hörsal 1, hus 1, Albano, Albanovägen 28.

Abstract

The overall aim of this dissertation was to examine associations between different facets of children's social emotional competence in culturally diverse samples. Specifically, I explored associations between relationship skills (i.e., cooperation, listening skills, turn-taking, seeking help), social awareness (i.e., understanding emotions and empathy), self-management (i.e., expressing needs and feelings, controling impulses), and empathy; and examined how these competencies relate to one another whilst considering the associations with internalising behaviours (e.g., anxiety, social withdrawal). Accurately understanding and assessing children's social emotional competencies, using psychometrically sound instruments, are essential to global efforts to support children's social emotional learning, academic achievements, and health.

The results are related to developmental theories of specificity (Bornstein, 2017), contemporary research in the fields of SEL and moral development, as well as Berry's (2015) ecocultural model. Furthermore, the interpretation of the findings is guided by the Collaborative for Academic, Social, and Emotional Learning (CASEL; Weissberg et al., 2015) model for social emotional competence.

Study I reviewed theory and research literature relevant to child and moral development, within the context of early childhood care and education (ECEC), from a Swedish standpoint as part of the Nordic welfare model. This study discusses how particular ethics within moral development are reflected in the design, goals, and practice of the Swedish ECEC context; further how Swedish ECEC settings may support aspects of children's moral development.

Study II investigated the psychometric properties and factor structure of the Preschool and Kindergarten Behavior Scales (PKBS) and an index of empathy in a Swedish sample of four to six-year olds (N = 115). Results indicated a good fitting five-factor model PKBS and one-factor empathy model (posterior predictive p-value = .246), with good internal consistency (ω .73 to .92) in line with the CASEL model and prior research. Relationship skills were positively associated with empathy and negatively associated with internalising problems. Results provided support for the use of the PKBS as well as the empathy scale in Swedish preschools.

Study III examined the psychometric properties of a teacher-reported measure of young children's social emotional competence, the Social Competence Scale – Teacher edition (SCS-T), in two samples of preschool aged children growing up with varied economic resources/ conditions, cultural norms, and educational experiences, specifically, from Pakistan (N = 396) and Sweden (N = 309). Using structural equation modelling (SEM), bi-factor confirmatory factor analysis (CFA) models implying shared variance, resulted in good fitting models in each respective sample.

Invariance testing across samples revealed a subset of items from each factor structure with partial scalar invariance, whereby five items had equal thresholds and could be comparable across the two samples. The results of Z-tests showed significant ($p < .001$) latent mean differences between the samples. Compared to the Swedish sample, the Pakistani sample was 1.80 units lower on social competence ($z = -6.41$, $p < .001$) and 1.86 units lower on academic skills ($z = -7.87$, $p < .001$). The implications of these findings considering efforts to promote positive child development in diverse parts of the world are considered.

Key conclusions from this dissertation include the importance and need for more research in core developmental settings such as early childhood education and care settings, because such efforts will expand and deepen what is known about child development. Bridging constructs that unite the fields and theory about social emotional and moral development are also valuable and explored in the studies in this dissertation. A fundamental conclusion is that establishing a sound psychometric evidence base for social emotional learning instruments across diverse children growing up varied circumstances is essential work that is carried out in this dissertation and is likely to advance developmental and intervention science, including interventions that aim to support children's social emotional learning.

Keywords: *social and emotional competence, empathy, moral development, early childhood care and education, Preschool and Kindergarten Behaviour Scales (PKBS), Sweden, Pakistan, Social Competence Scale - teacher version (SCS-T), Structural Equation Modeling, Bayesian factor analysis.*

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Department of Psychology

Stockholm University, 106 91 Stockholm

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Sarah Thomas

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To Olive, Poppy, Jack and Fiona

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Selected additional scientific works not included in this thesis

I. Ferrer-Wreder, L., & Thomas, S. (2012). Advancing a global understanding of adolescence. *PsycCRITIQUES, 57*(37)
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Oxford University Press.
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List of publications

This dissertation is based on the following papers, which will be referred to throughout this document by Roman numerals:

I. Ferrer-Wreder, L., Eninger, L., Hau, H. G., Olsson, T. M., Sedem, M., **Thomas, S.**, & Westling, M. A. (2020). Childcare, culture, and child development: A Swedish perspective. In L. A. Jensen (Ed.), *The Oxford Handbook of Moral Development: An interdisciplinary perspective* (pp. 516 - 533). New York, NY: Oxford University Press.

II. **Thomas, S.**, Eichas, K., Eninger, L., & Ferrer-Wreder, L. (2021). Psychometric properties of a Swedish translation of the preschool and kindergarten behaviour scales (PKBS): A Bayesian structural equation modeling analysis. *Scandinavian Journal of Educational Research, 65,* 1171-1186.
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III. **Thomas, S.**, Kågström, A., Eichas, K., Inam, A., Ferrer-Wreder, L., & Eninger, L. (2022). *Young children's social emotional competence in Pakistan and Sweden: Factor structure and measurement invariance of the social competence scale*. Submitted, under review.

Author Contributions

Study I
LFW, LE, HGH, MS, ST, MAW: manuscript conceptualization and writing original draft sections. ST wrote original draft sections on empathy and international literature on ECEC, and co-wrote with LFW original draft of Bronfenbrenner and Jensen sections. LFW, LE, HGH, MS, MAW, TO (for the wider PATHS project, a basis of this chapter): funding acquisition, data curation, methodological design, project administration. All authors data collection (wider PATHS project, partial or complete project). All authors: writing—review and editing this chapter.

Study II
ST, KE, LE, LFW: manuscript conceptualization and writing—original draft sections. ST wrote original drafts of introduction, methods, and discussion sections. LFW, KE, ST: data curation. ST and KE: formal analysis. LE, LFW, KE and PATHS research group: funding acquisition. LE, LFW, ST and PATHS research group: investigation. LE, LFW and PATHS research group: methodological design. LE and LFW: project administration. All authors: writing—review and editing.

Study III
All authors (ST, AK, KE, AI, LFW, LE) participated in the manuscript conceptualization and writing. LFW, ST, AI, and KE: data curation. ST and KE: formal analysis. LE, LFW, and AI: funding acquisition. ST, AI, LFW and LE investigation. LE, LFW, and AI: methodological design. ST, LE, LFW, and AI: project administration. All authors: writing—review and editing.

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Introduction

Social emotional learning (SEL) interventions can improve the overall physical, mental and social well-being of individuals across the developmental lifespan, but also have the potential to equip children with the necessary life-skills for violence prevention and conflict resolution; encourage peace and equity in an increasingly challenging 21st century, and support children's resilience as they cope with everyday as well as historically unique stresses and challenges (Corcoran et al., 2018; Domitrovich et al., 2017; Sauve & Schonert-Reichl 2019; Taylor et al., 2017; Torrente et al., 2015; Weissberg et al., 2015).

To facilitate social emotional competence as well as child and family well-being across the globe, the foundation of intervention (which is valid, reliable, and culturally relevant measurement) should be advanced, particularly in underrepresented countries (i.e., non-English speaking and developing countries; Cefai et al., 2022). Advances in measurement is a core pillar of the promotion of children's social emotional learning (SEL) and ensuring that an instrument behaves in line with the theory on which it is based and is ecologically valid and fits the population and context of interest and indeed measures what it is we say it is measuring, is fundamental to advancing our understanding of social emotional competence (Cefai et al., 2022).

This dissertation provides a foundation for an improved understanding of social emotional competence among children attending preschool in Sweden and Pakistan, as well as contributes to further advances in the measurement of SEL in these settings. The goals of this dissertation were to examine how certain social emotional competencies and aspects of moral development are valued, promoted, expressed, and how they function in given organisational and cultural settings; specifically, how preschool is connected and reflective of wider national contexts for early childhood education and care (ECEC) in Sweden and Pakistan. Further, I discuss the contextual factors that contribute to a high-quality ECEC setting in Sweden, and the importance of the ECEC setting on the promotion of a child's social emotional competence.

The studies in this dissertation are rooted in Bornstein's (2017) specificity principle and Berry's (2015) ecocultural model, and guided by the Collaborative for Academic, Social, and Emotional Learning (CASEL; Weissberg et al., 2015) model for social emotional competence. I do not assume that the constructs of concern in this dissertation are universal in their expression, development, or function across nations and cultures; instead, I take a culture-by-

culture approach (Berry, 2019; Bornstein, 2017) in order to support the advancement of psychology and the research field of SEC. Further, the proximal relationship between social emotional competencies and moral development is examined, using Jensen's (2011) cultural-developmental approach; and in terms of Jensen's three ethics (i.e., autonomy, community, and divinity), the development of morality reflected within cultures, and how each is dependent on a given society's support for a particular ethic is discussed (Jensen, 2011).

In terms of moral and social emotional development, this dissertation considers the role culture plays during child development, notably in Sweden and Pakistan, and discusses the wider values, resources available, social values and policies impacting this development. Although this dissertation can only scratch the surface of key cultural considerations important to understanding any aspect of child development in these contexts, it helps to fill the dearth of much needed contemporary studies of the development of children's social emotional development and in the case of Pakistan, in an underrepresented part of the world.

Development in Cultural Context

"When words like global and around the world are mentioned, scholars of human development are likely to raise their eyebrows and mutter to themselves, 'Easier said than done,' in part because one has to then address the relation between culture and development. Of course, many scholars now recognize that development 'is a joint function of the person and context' (Bronfenbrenner, 2005, p. 95). Yet, everyday science and theory development have not lived up to this simple comment (Bronfenbrenner, 2005)" (Ferrer-Wreder & Thomas, 2012, np).

Specificity Principle

This dissertation is based on the importance of the idea of person-context interactions as fundamental to understanding human development (Dimitrova & Wiium, 2021). In this case, the focus of theory and empirical study are on a dynamic and developing person encountering and interacting with, and in some cases, contributing to a dynamic and developing context (Dimitrova & Wiium, 2021). This is important in a discipline that has previously and largely ignored the influence of the role of culture in shaping the development and display of human behaviour (Berry, 2019). Contexts have been diversely defined and could include those contexts close to the developing child such a preschool classroom or the preschool itself, the home environment or more distal but still ever-present culture as an essential aspect of the everyday life of the child (Bronfenbrenner, 2005).

A more specific theory that helps to understand the importance of culture in

human development is Bornstein's (2017) specificity principle. This idea posits that the existence of variations in human development occur, in part, as a function of specific setting conditions (e.g., place), during specific times (e.g., developmental period), and involving specific individuals (Bornstein, 2017). This view does not preclude the identification of general concepts and interactions/processes of development across all people, but challenges researchers to not assume that general concepts and processes of human development operate in a similar fashion across the diversity of human development across contexts and across historical time (e.g., Pandya et al., 2021). Bornstein's (2017) specificity principle challenges the researcher to consider that the phenomena of interest in human development (e.g., engagement with others) could manifest itself in a unique or similar way among children living in varied parts of the globe, and further that the measurement of such development across cultural and societal contexts must be carefully considered and culturally valid measurement is to be strived for and considered critically.

Psychological research and many of the instruments developed for use in the field of child development are often developed in western, educated, industrialised, rich, and democratic (WEIRD) countries (Henrich et al., 2010). WEIRD countries are societies whereby individualism is often highly regarded and intrapersonal development is prioritised over interpersonal development and collectivism; whereas collectivist societies tend to support and foster social relationships and interpersonal development (Henrich et al., 2010). With the vast amount of psychological research happening in WEIRD countries, the result is the dominant position of a Western Academic Scientific Psychology (WASP) in relation to other cultural perspectives on human behaviour (Berry, 2019). This being said, individualism and collectivism are not mutually exclusive and degrees of these sets of beliefs, norms, and other aspects of culture (which make up part of the setting conditions for development) can co-exist in a given society and among individuals living in those societies (Henrich et al., 2010). The challenge for the researcher then, in any given society, is to resist general or universal assumptions and a culture-centric viewpoint (i.e., WASP), and to consider how individual qualities, dimensions of development, and other specific and local contexts can be measured in a culture-by-culture approach. The specificity principle is also consistent with Berry's (2019) ecocultural model within the field of cross-cultural psychology, with an emphasis on ethnographic studies combined with psychological research methods, which examines the similarities and differences in behaviour among individuals who have developed in different cultures with a strong consideration of individuals' unique experiences within diverse ecological and socio-political contexts (Berry, 2019).

Returning to the specificity principle (Bornstein, 2017), this idea helps us to understand the vastness and likelihood variation in human development which includes the development of social emotional competence. Outcomes during development, in a given population, context, relationship, timepoint, occur in

part as a function of this diversity and uniqueness and moves us away from assuming that constructs of importance are expressed in a universal manner, to embracing the richness in diversity and the multidimensionality of development itself (Bornstein, 2017). Because development may vary as a function of specific local setting conditions and wider social and cultural structures (Fox & Bloemraad, 2015), it is important to consider how culture is regarded in developmental science and consider how differences of culture are important to the development of interventions that can support and improve the development of children (Dimitrova & Wiium, 2021).

Culture and Moral Development

There are many definitions of culture. For example, one view of culture is that it involves symbolic and behavioural inheritances (i.e., transmitted culture) co-constructed by individuals who are part of a community (self-defined and/or ascribed member of that community), and can be represented in views on nature, society, meaning of life and religion, and reflected in everyday social practices (Jensen, 2011). One formulation important to this dissertation is that culture is socially important qualities that vary across individuals and groups that play an essential role in the development of our beliefs systems and preferences and are reflected in our social policy and institutions (e.g., how early childhood education and care are organised and valued; Campbell 1967; Cavalli-Sforza & Feldman 1981; Henrich 2015; Richerson & Boyd 2005). Also, reflected in the studies of this dissertation, is the idea that culture is a fundamental consideration in research, it should be appreciated as inherently built into the constructs which we are measuring (Dimitrova & Wiium, 2021).

Take, for example, culture as expressed through social policy, and the ways in which family and educational policies structure the local setting conditions for children's experiences of their preschool. If we consider all of the components of family policy: universal subsidised child care, number of paid and unpaid parental days and the number of days reserved for each parent, number of years a continuing child-allowance is paid out, investments in work life balance; we start to uncover the essence of the 'culture' co-constructed by people and expressed through governments via policy and institutions as well as by individual people (or children) engaging in daily social practices. It is not necessarily the absolute amount of money transferred to parents for childcare which defines the cultural and social stance towards families and education in a given society, but rather, a collection of moral values of a society that shape connected laws and social policies and practices. Social policies "involve weighing of moral goals such as individual rights, the duties of individuals or societies who are well-off toward individuals or societies who are less well-off, and how to optimise a variety of psychological and physical benefits for various members of society" (Jensen, 2011, p. 17).

Aspects of culture that were important in this dissertation are reflected in specific local setting conditions (places; Bornstein, 2017) in which studies were conducted namely in preschool contexts in Sweden and Pakistan, as well as culture entering into the measurement/analysis approach (an invariance testing approach) used to examine aspects of social emotional competence in children attending preschool in different national contexts. Briefly, stated measurement invariance involves a series of statistical tests that helps to understand the psychometric properties of a scale or items and to determine if these properties are appropriate to compare in different groups or with the same group across assessments (Putnick & Bornstein, 2016). More specifically, as noted by Putnick and Bornstein (2016, p. 1): "Measurement non-invariance suggests that a construct has a different structure or meaning to different groups……so the construct cannot be meaningfully tested or construed across groups or across time". How measurement invariance is examined in the present Study III is explained in greater detail in the description of the results later in the kappa and in Study III.

It is important to note that specific aspects of culture (e.g., family and educational policy, participants' cultural beliefs or reasoning) were not measured in the studies in this dissertation. The studies in this dissertation originated from intervention trials of a particular preschool social emotional learning intervention and the main design and research considerations were focused on outcome evaluation of this intervention. Further, such outcome studies have been conducted in a handful of nations, including Sweden and Pakistan. Showing the feasibility of measuring young children's social emotional learning in these contexts however sets the ground for more extensive studies that are designed to measure important aspects of culture as an a priori consideration. Yet, to completely disregard culture and the contextual features of early childhood education and care for the participants in these studies, as well as to ignore how culture may have entered into measurement in these studies, would be an error and would likely lead to missing the practical and theoretical advances that these studies can contribute.

The Cultural-Developmental Approach

The cultural-developmental approach describes the development of morality as a malleable life-course trajectory which varies across individuals and cultures (Jensen, 2011). This theory was formulated by reviewing research across diverse cultures, and focuses on three ethics: autonomy, community, and divinity and these ethics are reflected within cultures and societies, and expressed by individuals in daily life (Jensen, 2011). The ethic of autonomy includes a sense of morality (i.e., values and beliefs about what is right or wrong, what is valued or to be avoided which can be viewed as normative assumptions; see Kurtines et al., 1990) that includes value placed on the well-being

and rights of the individual (Jensen, 2011). The ethic of community involves a sense of morality in terms of valuing group membership and belonging – as reflected through customs in a given society and through a sense of duty to others in that group (Jensen, 2011). The ethic of divinity focuses on a sense of morality of people as spiritual - considering individuals' role as part of natural law and their relationship with a spiritual or religious entity (Jensen, 2011).

For individuals, the trajectory of developing each ethic (all three are developing within all individuals) is dependent on the support found in a given culture for a particular ethic (Jensen, 2011). For example, Pakistan is a largely collectivist culture (Humanium, 2021), and thus in some elements of life and childcare, an ethic of community may be prioritized over autonomy. Pakistan is also a nation in which religiosity is common (Government of Pakistan, nd) and values rooted in concerns about divinity would also be likely common (e.g., Durrani & Crossouard, 2020). Sweden, given the egalitarian aspirations of its welfare model and the prioritisation of the rights of the individual and fairness between individuals, arguably balances, both, the ethics of community and autonomy. For example, in a study of Scandinavian emerging adults' views of life were characterized by values rooted in the ethics of community and autonomy and a lack of views that concerned divinity (Arnett & Jensen, 2015). In terms of the prevalence of the values rooted in the ethic of divinity, a large scale, cross national study of religious beliefs found that within mainstream ethic groups in Sweden that a minority (13%) of Swedish participants reported being religious (in beliefs or behaviors; Dimova & Dimova, 2021). This is also consistent with the results of the study of emerging adults' values by Arnett and Jensen (2015).

The implications of the cultural-developmental approach by Jensen (2011), in relation to child development, would be that a child developing in a culture prioritising autonomy, for example spending a large portion of their early childhood one-on-one with a single caregiver, may come to develop the ethic of autonomy at a faster pace and earlier in contrast to a child developing in a culture prioritising community, spending the majority of their early childhood in a group of children being cared for together with peers. This second child may, on the other hand, develop early and at a more accelerated rate the ethic of community relative to the first child.

Early Childhood Education and Care Settings

Preschool - Key Developmental Context and Importance to Later Development

This dissertation focused largely on the context of preschool/day care also called early childhood education and care (ECEC) settings. In this dissertation, preschools represent specific local setting conditions (places; Bornstein, 2017)

or a contextual environment, whereby development is supported, and includes classrooms, schools, as well as the people in these contexts including families/caregivers, teachers, the children themselves, and the wider community members. These settings are further connected to wider contexts of family and educational social policies as well as social values such as the ethics of autonomy (individualism), community (collectivism), and divinity in a given society; largely because inequities are often deeply ingrained in the vast majority of these systems, we can expect to gain insight into these larger macro-cultures by examining places (Bornstein, 2017) also called key settings (Weissberg et al., 2016) or contextual environments in a society/aspects of culture (Bronfenbrenner, 2005; Ferrarini, 2006).

The aspects of culture that were important to the studies in this dissertation, referring to setting conditions (or places; Bornstein, 2017), was specifically the ECEC setting. Outside of the home, the ECEC setting is an important context for development, where children interact with adults and peers outside of their family. Social emotional competence can, both, be taught in ECEC settings, as well as modelled by teachers and other adults in this context; and thus, lead to an increase in the motivation of the child, and bonding between the teacher and child, as well as decreasing problematic behaviours (Shriver & Buffett, 2015). Further, a safe, stimulating, and caring ECEC setting (i.e., high-quality ECEC) can promote a child's social, emotional, and moral development (Howes et al., 2008; Mashburn et al., 2008).

High-quality ECEC considers the following: teacher-training/sufficient educational attainment, low child-teacher ratio as well as the absolute number of caregivers, and a healthy and safe physical environment (Swedish National Agency of Education, 2016). An ECEC setting that encourages play, physical activity, and a healthy physical environment can help children to develop a wide array of social emotional competencies; examples of these constructs as discussed throughout this dissertation are: relationship skills (i.e., cooperation, listening skills, turn-taking, seeking help) and social awareness (i.e., understanding emotions and empathy) (UNICEF, 2021). Prospectively, high-quality ECEC, has been linked to later prosocial skills and less withdrawal in middle childhood (Bohlin et al., 2004), as well as fewer symptoms of social anxiety and depression in early adulthood (Bohlin & Hagekull, 2009).

Swedish and Pakistani Early Childhood Education and Care: Preschools as a Key Context for Child Development

This section provides a brief overview of the wider context for child development and how preschool is connected and reflective of wider national contexts for early childhood education and care (ECEC); in particular, in Sweden and in Pakistan.

Sweden, as a nation, is social democratic, largely secular and wealthy by

global standards (IMF, 2021). Swedish social institutions, such as preschools, have a child social welfare emphasis reflected in practices that support equality of opportunity and treatment, the rights of the child as important to decision making in the care of children (worldpopulationreview, 2021). Other values of importance, in understanding Swedish early childhood care and education, include the wider family policies that aim to make it possible for all parents to participate in the home and work, and a strong emphasis on promoting gender equality, and that family structures can regularly consist of families that are single parent and dual parent households (IMF, 2021; worldpopulationreview, 2021).

In Sweden, in general, children are increasingly culturally and linguistically diverse (Statistics Sweden, 2020). In some areas of the largest Swedish cities, the percentage of the population with a foreign background – this is defined as being born abroad oneself or being born in Sweden but having parents who were both born abroad – ranges from 34% to 50% (Statistics Sweden, 2020). Thus, many children in Sweden are developing in a multi-cultural/ linguistic preschool setting that also has mainstream Swedish culture and Nordic welfare model ideals infused into the organisational structure and goals of their preschool, as well as the children's daily activities.

Sweden's preschool (in Swedish: *förskolan)* national curriculum promotes prosocial, emotional, and cognitive development through the engagement of child-led play-based learning (Skolverket, 2019). An example of this ethos can be seen during mealtimes, whereby children eat together with their caregivers and educators, are encouraged to serve one another and share warm food prepared and provided by the school. In recent years, the Swedish preschool curriculum has placed a greater importance on academic accomplishments (e.g., literacy) in children, however the expression of empathy and consideration for others in an increasingly culturally diverse society remains one of the core pillars. Preschools in Sweden remain a context whereby to "promote the development of children to become active, creative, competent and responsible people and members of society" (Skolverket, 2019, p. 7). Among those working in Swedish ECEC contexts there is variation in educational background with some Swedish preschool teachers having undergraduate and masters level university degrees as well as childcare assistants who have diverse educational backgrounds including a 3-year upper secondary training certification in preschool education and to those with little formal education in early childhood education and care, and with primarily on the job experience only (Panagiota et al., 2017).

Pakistan is a Muslim majority nation with a rich ethnic and cultural diversity (Khan, 2018). English is the official spoken language, but the national language is Urdu, which is widely spoken and understood throughout the country (humanium, 2021). Nearly two-thirds of family systems in Pakistan are joint

extended family structures (i.e., parents, children, and grandparents living together under one roof), while only one-third of the population live in nuclear families (Khan, 2018). Pakistan's current population is 226 million and, of this population, roughly 25% live under the poverty line (humanium, 2021). There are 80 million children in Pakistan, with fewer than 25% living in urban areas with access to fundamental needs (e.g., namely clean water, food, and health services; humanium, 2021). Pakistan provides free and compulsory education for children between the ages of five and sixteen, however, has the second highest number world-wide of children, aged five to 16 years old, not attending school (44% of school-aged children; UNICEF, 2021). Forty-four percent of the boys and 56% of the girls leave school before reaching grade five (National Education Policy Review Team, 2007). "The current curriculum approaches in Pakistan underscore language and cognitive skills and ignore social, emotional, cultural, physical and secular/spiritual development" (Khan, 2018, p. 315).

Many of Pakistan's preschool classes (in Urdu: *katchi*) are informal whereby young, unregistered children attend school with their older, registered sibling, and follow along with the existing lessons, within the same classroom in a multi-grade environment, and without any formal teaching provided to unregistered children. Because of the lack of formal teaching or curriculum, the government of Pakistan, in 2002, set out to formalise early education, together with the Teachers' Resource Centre, and create a formal curriculum for *katchi* classes; as well as formalise and extend the number of classrooms in public schools for this age group and to increase the use of child-centred methods. Unfortunately, with a lack of funding and lack of formally educated teachers in Pakistan, the curriculum has not been implemented and children remain in crowded classrooms, with outdated syllabi, didactic and autocratic approaches to learning, and summative examinations (Rich-Orloff et al., 2007).

Positive Developmental Frameworks

Historically, developmental scientists have had a substantial focus on the problematic, risk, and pathological aspects of human development; in the last few decades, diverse empirical studies and the theoretical development of positive behaviour and development frameworks have grown in order to strengthen a more holistic view of development (Dimitrova & Wiium, 2021). Within this field called *positive development* (Tolan et al., 2016), interventions shifted from having the goal of merely preventing problematic outcomes, to the promotion of well-being, and individual skills and assets, as well as understanding the complex associations between individual and contextual strengths/assets as well as problems (Dimitrova & Wiium, 2021).

Positive Developmental Frameworks in Brief

Four distinct theoretical frameworks encompass most of the measurement and intervention work within the field of positive development (Tolan et al., 2016): Social Competence (SC; Waters & Sroufe, 1983), Social and Emotional Learning (SEL; Elias et al., 1997), Positive Youth Development (PYD; Lerner et al., 2002), and Positive Psychology (PPsy; Seligman & Csikszentmihalyi, 2000). There are numerous empirical studies exploring the conceptual intersections and distinctions among these four positive theoretical frameworks. Below, respective frameworks will be briefly described with a greater focus on those frameworks (i.e., social emotional learning) and constructs (e.g., engagement with others) that have direct relevance to the studies in this dissertation.

The social competence (SC) framework stems from social information processing and social cognitive theories, as well as theories focusing on emotional intelligence and has had its greatest empirical impact to date on understanding and promoting skills and behaviours of preschool/elementary school aged children as well as adolescents (Tolan et al., 2016). SC examines effective functioning within social contexts, with the majority of interventions in schools (Tolan et al., 2016). Often this framework includes self-control, decision making skills, moral belief systems, and prosocial connectedness (i.e., relationships with prosocial others; Tolan et al., 2016).

The positive youth development (PYD) framework applies a developmental systems perspective and views of the person-context interaction (i.e., the child in key developmental contexts such as school/classrooms, homes, neighbourhoods) as foundational to what positive development entails and how it can be promoted (Dimitrova & Wiium, 2021). PYD considers thriving (i.e., increased beneficial contributions to oneself as well as one's community, family) and the pursuit of optimal development (e.g., increasing interests, skills and abilities) during adolescence as the conceptualization of positive development (Lerner et al., 2002). PYD interventions are diverse and work directly with youth and/or target school settings as well as broader communities (e.g., after school programs, mentoring initiatives; Dimitrova & Wiium, 2021). Predominant within the PYD framework is a young person's development of their five C's (i.e., competence, confidence, connection, character, and caring; Lerner et al., 2002) and a young person's use of individual developmental assets (i.e., individual strengths) to fit their needs within the context that they are in (Lerner et al., 2002). The PYD approach's particular emphasis on person-context interactions was relevant to the contextual aspects of this dissertation, such as preschool context rooted in specific organisational and cultural contexts as settings for the development of children's social emotional competencies.

The positive psychology (PPsy) framework stems from humanistic and clinical psychology with a focus on attributes and states of both individuals and contexts reflective of the optimal and/or positive sides of human functioning (e.g., happiness, compassion, etc.; Tolan et al., 2016). PPsy is relevant across

the lifespan and intervention settings are widespread/inclusive including workplaces and some of PPsy's key constructs include: flourishing, flow, and life satisfaction (Tolan et al., 2016).

Like SC, the social emotional learning (SEL) approach is rooted in social information processing, social cognitive theory, and the field of emotional intelligence; and similar to SC, SEL also has its intervention focus on school-aged children as the primary population of interest (Tolan et al., 2016). However, what makes SEL different, from SC and other frameworks, is its concern with documenting and understanding the dynamic nature of changes in behaviours, attitudes, and emotional/affective states; focusing on the process of developing the "ability to understand, manage and express the social and emotional aspects of one's life" (Elias et al., 1997, p. 2). With a strong contextual focus (like the PYD framework), SEL's interventions encompass school/classroom and afterschool settings and the development of SEL stems, in large part, from the practical needs of schools. This then demands interdisciplinary collaboration and methods across psychology and educational sciences (e.g., Sauve & Schonert-Reichl 2019; Weissberg et al., 2015). Often included in the SEL perspective are: self-awareness, self-management, social awareness, relationship skills, and responsible decision making (Weissberg et al., 2015). Of all of four positive frameworks, the SEL approach has the most direct relevance for this dissertation and was central to the constructs and hypotheses explored in this dissertation and the broader educational/contextual focus.

Although there are contextual differences, differences in measurement practices, or populations of interest; each of the positive development frameworks shares several commonalities (Tolan et al., 2016). For example, two important components shared by all four constructs are self-control as it relates to management of emotions; and engagement with others as defined by genuine and positive mutuality. Another common thread across all four constructs is societal bonding/moral ethical standards; or in other words, a moral system of belief (SC), responsible decision making (SEL), caring and compassion (PYD), or meaning (PPsy). Despite their differences and the linguistic semantics of each theoretical framework, many of their shared core emphases are considered to be fundamental constructs within the research field of children's *social emotional competence* (Denham et al., 2016; Weissberg et al., 2015).

Social Emotional Competence as a Research Field within the Positive Development Framework of Social Emotional Learning (SEL)

The study of children's social emotional competence is wide ranging (e.g., Sauve & Schonert-Reichl 2019), yet, several constructs/phenomena are stud-

ied in their own right and have an extensive evidence basis and construct specific theory development such as in the study of empathy (e.g., Cameron et al., 2022; Decety & Holvoet, 2021). As another illustration of this diverse research field, social competence and emotional competence are sometimes viewed as separate constructs; however, they are often interrelated, and in many cases difficult to empirically and practically disentangle (for example from the standpoint of teachers in a classroom context) and, as such, are typically regarded as part of an overarching meta-construct with interrelated facets that are distinct but interconnected to one another (Weissberg et al., 2015). As a research field, social emotional competence brings several diverse constructs/aspects of development under the same conceptual, empirical, and practical umbrella, because an integrative approach is reflective of the everyday actions and lives of children (e.g., Riggs et al., 2006).

But what is social emotional competence? Social and emotional competencies are intertwined and in many cases co-dependent on one another (e.g., Riggs et al., 2006); and key competencies include for example, emotional knowledge and emotional regulation (i.e., delaying gratification, and normative/appropriate expression of feelings; Ross & Tolan, 2018). As noted earlier, from a cross positive development framework perspective, engagement with others (a behavior reflective of social emotional competence) is indicative of a child's connections and interactions with important others (peers and adults) and is characterised by an authentic, positive connection and that serves as an arena for development (Tolan et al. 2016). This means that social competence itself involves a number of skills and behaviours necessary for getting along in social relationships and, in turn, being valued and appreciated by others (Ross & Tolan, 2018). This broad construct involves implies an understanding social life and rules and is demonstrated through socially and culturally appropriate interactions with others, being generous and thoughtful, and normative in a variety of social contexts (Ross & Tolan, 2018).

Together, social emotional competence (SEC) involves skills and knowledge that work across several developmental domains and processes and for example integrates children's emotions, thinking and behaviour in a context that is itself developing (Bierman et al., 2008). Social emotional competence is important to academic achievement and adjustment across a variety of areas (e.g., Dodge et al., 2008; Taylor et al., 2017) and typically also involves infrequent displays of problems, such as being aggressive, argumentative, defiant, or distracted (Thomson et al., 2021). Generally, from theoretical and empirical standpoints, one would expect to observe positive empirical associations between facets of social emotional competence (such as those in the CASEL SEL model, to be described next), and negative associations between social emotional competencies and indicators of problematic adjustment (e.g., Riggs et al. 2006; Weissberg et al., 2015).

Collaborative for Academic, Social, and Emotional Learning (CASEL)

The widest conceptual basis of this dissertation is rooted in positive developmental frameworks, namely SEL and more distally in the PYD perspective for a focus on the context of development, and empirically within the field of social emotional competence. Because of this, a specific theory of social emotional competence that guided this dissertation was the Collaborative for Academic, Social, and Emotional Learning (CASEL; Weissberg et al., 2015) model for SEL. CASEL's SEL model outlines five broad, social emotional competencies: (1) self-awareness, (2) self-management, (3) social awareness, (4) relationship skills, and (5) responsible decision-making (Weissberg et al., 2015). The unique properties and function of particular social emotional competencies; how competencies work together in everyday situations and contexts, as well as how competencies relate to other outcomes of importance (such as indicators of problematic adjustment like internalising behaviours) are essential considerations in SEL (Weissberg et al., 2015).

Within the CASEL model, self-awareness includes many emotional competencies and respective behavioural domains such as: the ability to recognize and identify emotions and understand the interconnections between emotions, thoughts, and behaviours; and the ability to assess one's strengths and weaknesses or, in other words, a well-grounded sense of self-efficacy and optimism (Weissberg et al., 2015). The self-management domain concerns intrapersonal skills and requires "…the ability to delay gratification, manage stress, control impulses, and persevere through challenges" (Weissberg et al., 2015, p. 6); further, involves "the abilities to manage one's emotions, thoughts, and behaviours effectively in different situations and to achieve goals and aspirations" (Weissberg et al., 2015, p. 6). In childhood, this may be shown by children as confidence in a social situation; reflective in children who can calm down, control their temper, wait patiently when needed, and can accept things not going their way (Weissberg et al., 2015).

Social awareness is "…the ability to take the perspective of those with different backgrounds or cultures and to empathise and feel compassion" (Weissberg et al., 2015, p. 6); in other words, affective perspective-taking is to demonstrate empathic concern and to share emotions/have compassion for another person. Relationship skills include "the abilities to establish and maintain healthy and supportive relationships and to effectively navigate settings with diverse individuals and groups", and call for "…communicating clearly, listening actively, cooperating, resisting inappropriate social pressure, negotiating conflict constructively and seeking help when it is needed" (Weissberg et al., 2015, p. 7). Lastly, responsible decision-making includes "the abilities to make caring and constructive choices about personal behaviour and social interactions" (Weissberg et al., 2015, p. 7) and requires that the child navigate

diverse contexts in ways that are considerate of care for the child and others.

How the relationship skills, social awareness, and self-management CASEL's domains relate to each other, and how indicators of these competencies relate to other important outcomes or markers for children's well-being (e.g., internalising behaviours) or everyday functioning (e.g. academic skills), was of particular interest in this dissertation. Relationship skills, empirically speaking, can be indexed by social cooperation and this competence provides children the opportunity to be affected by others, engage with children of differing as well as complementary opinions and ideas, often leading to further positive social interactions (Seçer et al., 2009). Thus, not only are the domains of social cooperation and social interaction positively associated with one another in prior studies, but children possessing these relationship skills have also been shown to display less impulsivity and aggression and greater emotional regulation (e.g., Seçer et al., 2009). In a test of the CASEL model with early adolescents in the U.S. over time (N = 1,717, 4H study cohorts), Ross and Tolan (2018) found support for a theoretically consistent factor structure of the CASEL facets in grades 6 and 7 and expected positive associations to positive outcomes in regards to school. Previous research has also indicated negative associations between the prosocial/communication skills construct of the Social Competence Scale-Teacher (edition), and internalising and externalising symptoms (e.g., Gouley et al., 2008). In this dissertation's method section, there is further description of the specific constructs and measures used to index children's social emotional competence in Studies II and III. The empirical coverage of these facets is recognized as not fully encompassing the CASEL domains but as providing one part of a wider picture of what these social emotional competencies can involve in particular settings.

CASEL's framework addresses SEL systematically; encouraging the establishment of healthy environments or *"*key settings*"* (e.g., classrooms and communities) whereby SEL is implemented and organised (Weissberg et al., 2015). Empirically, CASEL's domains of self-management (e.g., emotional regulation) and relationship skills have shown positive associations (e.g., Russell et al., 2016), as well as positive associations with children's temperament (e.g., Calkins & Hill, 2007), other aspects of executive functioning, and academic skills (e.g., Wolf & McCoy, 2019). Previous studies further outline the positive associations between emotion regulation skills and peer acceptance and social adaptation (Blair et al., 2016). Although much of CASEL's five components are taught and developed during the pre/school aged and adolescent years, further development is promoted throughout the life-course and is considered foundational for academic success and engagement, as well as health promotion and well-being (Weissberg et al., 2015). A key construct, namely empathy, and illustrations of representative research studies that concern the CASEL domain of social awareness are described in the next section.

Moral Development, Empathy, and Prosocial Behaviours

Moral development can include moral reasoning or behaviour (e.g., Kurtines et al., 1990; Pandya et al., 2021). When children feel and act in a way that is empathic to others, processes within the domains of moral as well as social emotional development are involved. Moral psychology is concerned with a socially and culturally based set of rules and beliefs which govern considerations of what is right and wrong in a given society at a given point in history (Kurtines et al., 1990; Pandya et al., 2021). Moral development involves how the developing person encounters, makes sense, and acts in connection with these rules and beliefs (Jensen, 2011). Culture is a fundamental consideration in moral and social emotional development (Jensen, 2011). Culture is described in a later section of this dissertation.

Notably empathy, and emotions expressed through empathy, are considered by some to be the basis of one's conscience and moral behaviour (Izard, 2002; Decety & Holvoet, 2021). However, it can be noted here that morality is acquired through a system of culturally understood and socially important information (Buckwalter & Turri 2014; Cath 2019). What is moral in a given culture is explicitly taught, modelled, and practised (Pandya et al., 2021). Like learning and becoming adept at any social skill, moral development requires input of the rules of right and wrong; numerous examples or displays of the consequence of actions on the well-being of others; and the reasoning and/or justification for a set of moral norms (Pandya et al., 2021; Zagzebski 2013). Like engagement with others, empathy also represents a cross framework construct, and it plays a key role in the social emotional and moral development of children (Decety & Holvoet, 2021; Weissberg et al., 2015). Empathy involves the ability to take other individuals' perspectives into account and to experience their feelings and, as such, belongs within the CASEL domain of social awareness (Weissberg et al., 2015). Social emotional competencies like emotional knowledge are important to experiencing empathy, but also function as a wider construct that has relevance and functioning beyond settings in which empathy is involved (Weissberg et al., 2015).

The development of empathy begins early in infancy (e.g., sensitivity to distress; Decety & Holvoet, 2021), and continues to develop sequentially: for example, in order for children to take the perspective of other children, they must first be capable of recognizing their own feelings and emotions, and secondly be able to discriminate the emotional state of others (Webster-Stratton & Reid, 2004). Emotions expressed through empathy can act as one, of several, foundations for moral behaviour (Eisenberg, 2010; Izard, 2009) and yet empathy is not the only basis for moral behaviour. Further, morality and empathy are not simply interchangeable terms, and how empathy fits into the wider diversity of moral reasoning and behaviours is not entirely straightforward from an empirical standpoint (e.g., Eisenberg et al., 2010).

Empirically, empathy is not only related to prosocial and considerate behaviours, but may act as a precursor for positive adjustment (e.g., cooperation, working with peers and good communication) in other developmental periods (Farrant et al., 2012; Goldstein & Winner, 2012). Children who demonstrate more empathic responses are better able to manage their behaviours and emotions well (e.g., fewer externalising behaviours and higher levels of social competence; Decety & Holvoet, 2021), and tend to be less physically and verbally aggressive, more prosocial, and better equipped to cope with problems in adolescence (Roberts et al., 2014). SEL programs which aim to foster empathy with a contextual focus on caring classrooms and schools, in turn, increase social skills and positive social behaviours, such as the CASEL domains of relationship skills (e.g., engagement with others; Soliman et al., 2021).

Even though empathy is generally associated with positive outcomes as noted, it is also the case that empathy has a nuanced association with outcomes has been called a "risky strength" in that empathy is developmentally key (linked other aspects of development) and linked to many positive outcomes when experienced a moderate level, but not when experienced at highly elevated levels and in combination with other risks; and when empathy is involved in increased risk for greater internalizing problems depends on several factors within and outside of the child (Cicchetti et al., 2014, p. 1547).

For example, lower empathy is associated with aggression and emotional detachment (Nickerson et al., 2008); conversely higher empathy in some cases has been associated with greater classroom engagement and belonging (Barr & Higgins-D'Alessandro, 2007). As well, empathy is consistently and positively associated with prosocial interactions in children (Rumble et al., 2010); with preschoolers who are rated as having more prosocial skills by their teacher as also having higher levels of empathy (Soliman et al., 2021). However, patterns can also be mixed depending on the framework and measurement of empathy and the selection of prosocial behaviours examined in studies (Eisenberg et al., 2010); for example, study results have indicated that personal distress (for some individuals, as relating to empathy) has been shown to be unrelated or inversely related to prosocial behaviours (Eisenberg et al., 2010). Much less can be concluded about the association between empathy and internalising behaviours (e.g., social-withdrawal and anxiety), with some study findings describing children with more empathy-related responses as having less social-withdrawal (e.g., Findlay et al., 2006), and other studies indicating a complex and nuanced connection between the level of empathy experienced (moderate or elevated) and the presence of other risks as predicative of when empathy is associated with poorer (e.g., greater internalizing problems) or more beneficial outcomes (e.g., Tone et al., 2014).

The Promotion of Social Emotional Learning (SEL) in a Global Context: Construct Validity and Invariance Testing

Interventions that promote children's social emotional competence in several parts of the globe are important and are linked to substantial benefits in a number of areas (Taylor et al., 2017; Torrente et al., 2015; Weissberg et al., 2015). To facilitate social emotional competence development, the core foundations for valued and beneficial SEL interventions should be advanced. This dissertation adds to the research literature on one (of several) key foundations for an improved understanding of social emotional competence among children attending preschools in urban settings Sweden and Pakistan, as well as contributes to further advances in the measurement of SEL in these settings.

Advances in Measurement of Social Emotional Competence as a Core Pillar of the Promotion of Children's Social Emotional Learning (SEL)

Assessment is foundational to evaluating the benefits of SEL interventions or practices whether it is part of a programmatic intervention or from an everyday educational practice perspective (Cefai et al., 2022; Wigelsworth et al., 2010). Assessment can be diverse and can include a variety of methodological approaches.

Teachers as Key to Child Development and the Promotion of Social Emotional Competence

Contemporary instruments that measure children's social emotional competence typically gather information from children, parents, peers or teachers and school staff members; very few attempts have been made to triangulate instruments to include children, parents, and teachers (Wigelsworth et al., 2010). Child reports and performance tasks are advantageous in that a child is able to provide very detailed information about themselves and we are able to gain some insight into the unique individual perspective and experiences of the child. However, self-awareness and the capability to differentiate self-concept follows a developmental trajectory and therefore child reporting through surveys is often not possible in younger children. Secondly, younger children may tend towards socially desirable responses and have difficulties reflecting on collective past behaviours; instead, they will often offer responses which reflect only on the most recent behaviour in memory (e.g., a child had a disagreement with a friend in the morning, and therefore answers 'do not get along with peers well' on a questionnaire; Denham et al., 2003).

Parents can provide unique and detailed insight on the behaviour of their children; however, this insight is limited to the home and therefore can be a reflection of a fairly narrow frame of reference. Peer-rated methods (i.e., peer nomination) can be good for collecting information on social-skills, however can be biased towards personal attributes such as appearance and academic achievement and are not ideal for collecting information on internal states such as emotional knowledge or competence (Frederickson & Cline, 2009)

The advantages of teacher ratings of child development and behaviour are significant. Teachers spend every day with a child and given previous teaching experience, have a number of students as a frame of reference for completing measurement (Denham et al., 2003). Teachers are often also formally educated in child development and may have some expectations of what is typical development coupled with the knowledge that there can be variation in development (Denham et al., 2003).

However, questionnaires can be lengthy for teachers who have multiple priorities to attend to daily, thus reporting via surveys on their students could prove to be burdensome from a time perspective, for the teacher to complete, and with this comes the possible loss of sensitivity when completing a vast number of questionnaires/scales (Denham et al., 2003). Additionally, teachers with less experience tend to score children lower in terms of social emotional competence, compared with more experienced teachers (Denham et al., 2003). Thus, the factor of years as a teacher and educational background and competence development of teachers are often important considerations that can have a significant impact on teacher ratings and are regularly not the empirical focus of many studies that use teacher ratings of children's development and behaviour.

Despite the limitations of teacher reported instruments as well as practical challenges for teachers to participate in assessment (such as time constraints), teacher-rated instruments have shown strong and positive associations with observations of executive functioning (e.g., Tamm & Peugh, 2019). Further, parent and teacher screening for maladjusted behaviours (e.g. Conduct Problems Risk Screen) have shown very good internal consistency, high convergent validity, good discriminant validity and moderate inter-rater reliability (Duncombe et al., 2012); and positive and significant associations between teacher and parent evaluations of self-management, prosocial behaviour, and emotional and behavioural difficulties of preschool children (e.g. Strengths and Difficulties Questionnaire and Social Skills Improvement System Social-Emotional Learning Brief Scales; Martinsone et al., 2022). Special considerations in terms of sample size, construct validity and invariance testing were taken in Studies II and III and are briefly described here in the context of developing sound measurement of social emotional competence as a foundation for the support of such competencies through intervention and educational practice.

Sample Size

In order to test the psychometric soundness (reliability and validity) of social emotional competence instruments from a quantitative perspective, adequate sample sizes are an important prerequisite to conducting relevant analyses in a sound way. Sample size can be a contentious issue in the social and behavioural sciences and often the 'rule of thumb' is to have 10 participants for each scale item to perform a traditional factor analysis at the observed item level; further, current recommendations may require more than 300 participants in order to observe comparability of patterns and replication (Clark et al., 1985). The use of structural equation modelling (SEM) in factor analysis (confirmatory and exploratory) also weighs in the issues of model complexity in relation to sample size. However, there are a variety of situations encountered globally when sample sizes are less than optimal or recommended, and there is still a need to have insight into the psychometric properties of various types of instruments/measures.

These issues can for instance be addressed using Bayesian factor analysis. In Bayesian analysis in general, parameters are variables that have distributions. For each parameter, a prior distribution that quantifies prior knowledge about the parameter is updated with estimates based on observed data to generate a posterior distribution that provides updated knowledge about the parameter (see Zyphur & Oswald, 2015). In Bayesian structural equation modelling (BSEM) specifically, the assumptions of zero cross-loadings and residual covariances can be relaxed by specifying prior distributions that have means of zero (reflecting the measurement theory) but small variances that account for plausible uncertainty about these parameters (Muthén & Asparouhov, 2012). Compared with maximum- likelihood factor analysis, Bayesian factor analysis holds novel capabilities, such as estimation of near-zero cross-loadings or quasi zero residual covariances, offering a more flexible approach when dealing with smaller sample sizes (Muthén & Asparouhov, 2012). To promote research in a global context, it is important to consider unique and alternative approaches to validity concerned analysis, which can allow us to, for example, identify meaningful residual variances and/or cross-loadings which exist in data, trim the model with empirical and substantive support without abandoning theory or identifying an incorrect model (Asparouhov et al., 2015).

Construct Validity with a Consideration of Culture

Investigations in different cultural contexts and languages often involve translating teacher reported measures of children's social emotional competence and adjustment. Linguistic equivalence often involves the translation and back translation of an instrument whereas functional equivalence means that an instrument is targeting the same behaviour between different comparison groups

(e.g., van de Vijver & Leung, 1997). On the other hand, cultural equivalence means that different comparison groups have interpreted the same underlying cultural meaning of an item, scale or instrument (e.g., Study III; van de Vijver & Leung, 1997).

Without considering cultural equivalence or cultural adaptation, we risk item bias; whereby individuals with the same target behaviour/psychological construct, because of cultural differences, do not equally endorse an item (van de Vijver & Leung, 1997; van de Vijver, 2013). This can occur because of inadequate translation; item contents are misconstrued because of cultural differences; or unintended triggering of assumptions about the target behaviour/psychological construct because of wrong or ambiguous word choice. For example, Pan and colleagues (2008) excluded items regarding religion as a protective factor when studying resilience among mainland Chinese students, because these items were much less meaningful for a largely secular sample compared with respondents from cultures emphasising religiosity. Item bias is the most extensively studied form of bias and its analysis can be examined by establishing scalar invariance (van de Vijver & Leung, 1997).

Invariance Testing

Standard psychometric analysis and properties are established routinely (e.g., internal consistency, test-retest reliability, construct validity, and discriminative validity), but further advanced analyses are important, and yet seldom performed, to better ensure that a given measurement is appropriate for possibly diverse subgroups of children (Wigelsworth et al., 2010). Similar to the consideration of bias, equivalence reflects the level of comparability across samples and with a consideration of culture and context. From a statistical standpoint, different levels of equivalence can be identified (van de Vijver & Leung, 1997).

Statistically in the evaluation of the appropriateness of an instrument to be used to compare subgroups, measurement invariance is an alternative term for equivalence. The meaning of invariance is "whether or not, under different conditions of observing and studying phenomena, measurement operations yield measures of the same attribute" (Horn & McArdle, 1992, p. 117). Van de Schoot and colleagues (2013) stated that the measurement structures of latent factors and items that make up a latent factor (e.g., a psychological construct) should be invariant (i.e., equivalent) to make meaningful comparisons in cross-cultural research (e.g., mean level comparisons of prosocial skills across two groups of children growing up and being educated in two national contexts: Sweden and Pakistan;). Given the availability of methodological and analytical guidelines, cross-cultural psychological research has options for making adequate inferences about comparability and distinguishing between genuine cultural variations and variations that are due to bias (Van de Schoot et al., 2013).

Despite the growth in cross-cultural and cross-national research, measurement invariance and equivalence testing has not gained popularity and/or is under-reported (Boer et al., 2018). Boer and colleagues' (2018) analysis of 382 cross-cultural comparative quantitative studies, published in the Journal of Cross-Cultural Psychology, found only 17% assessed measurement invariance. Boer and colleagues (2018) went on to suggest firstly, a lack of training and awareness in demonstrating measurement invariance; secondly, research design (e.g., experiments with single-item outcomes, or survey with single items or indicator measures) may deem invariance assessments as not adequate; thirdly, studies with large-scale data sets including many countries aggregate data making invariance also difficult to assess (Boer et al., 2018). Partial invariance is sufficient for meaningful comparisons between groups that could be culturally or otherwise defined (Davidov et al., 2012). Bornstein's (2017) specificity principle challenges researchers to consider development, including the development of social emotional competencies of children living in varied parts of the world; and the process of achieving partial invariance, ensured that we considered each measurement construct across specific contexts/subgroups. When appropriate to the study aims and samples, invariance testing remains an important tool for making meaningful subgroup comparisons (Boer et al., 2018).

General Aim

The overall aim of this dissertation was to examine associations between facets of children's social emotional competence as well as connections between social emotional competence and adjustment in culturally diverse samples. Each study is presented in an intentional manner with a logical order: first on a focused, local level, I reflect on key practice and theoretical groundwork of the research literature within the context of early childhood care and education from a Swedish and Nordic standpoint. Next, on a wider level, I address empirically the aims of this dissertation, by way of two cross-sectional studies with samples of children attending preschool in Sweden and/or Pakistan. Namely, there is a progression of a focused view on the Swedish context (Studies I and II) and then moving to more general view social emotional development in more than one context (Study III, including a Swedish context but extending into a Pakistani context). Moreover, this dissertation presents each study as a reflection of the progression of my training as a doctoral student (e.g., beginning with a contributing to then moving to a leading author position in each ordered study). It is important to note that the studies in this dissertation do not have a temporal order (one study connected after the other in a time sequence), and future directions laid out in each study stem directly from the study in question and do not necessarily imply the aims or study design of the subsequent study in this dissertation. Further, the overarching aim, of this dissertation, was to relate these empirical findings to relevant developmental theories (e.g., the SEL framework in positive development, the CASEL model), contemporary research, and practical advances that are necessary to make beneficial SEL interventions and practices more available in diverse parts of the world.

Method

Overview of Studies I, II, and III

I) The purpose of the first study was to theoretically examine early childcare and education in relation to culture and child development in Sweden, within a Nordic welfare model, and in relation to the ethics of autonomy and community (Jensen, 2011). Study I is a commentary, and not an empirical study; subsequently, it is not included in many of the following subsections (e.g., *Participants, Measures, etc.).* Because of this, I take this opportunity to provide a substantial overview of Study I, which lays much of the contextual foundation for Studies II and III, in understanding preschools in Sweden and how they are designed to foster child development. The main issues addressed in Study I are summarised in this section.

Structural and Process Features of ECEC. Early childhood education and care (ECEC) settings, in this study, refers to the community-based preschools and day care centres outside of the home. In this study, organisational features and processes important to understanding these ECEC settings, as a key ecology for human development, were discussed. As culture includes both past and changing behaviours, norms, beliefs, and habits of the individuals in a society, ECEC settings, in turn, reflect and include many of these factors.

In terms of supporting child development, quality of care provided and educational experiences are considered important for long term positive societal and individual outcomes, including positive moral development (Domitrovich et al., 2017; Yoshikawa et al., 2013). However, this association is complex and includes, but is not exclusive to, aspects of ECEC structural and interactional standards (Burchinal et al., 2010; Early et al., 2007), teacher professional development (Wasik & Hindman, 2011), and the general quality of the environment (Pianta et al., 2005). Despite the number of factors that help us to define high quality ECEC, generally these features can be divided into two categories: *structural* and *process* features.

Structural quality features include aspects such as child-to-teacher ratios, class size, and teacher training, for example (Early et al., 2007; Zaslow et al., 2010). The associations between structural quality features and social emotional competencies are at times inconclusive. On one hand, lower child-to-

teacher ratios have been linked to a reduction in social withdrawal and nonsocial play in children, while on the other hand, features such as class size, child-teacher ratios and teacher qualifications have shown no direct link to child social or behavioural outcomes (e.g., Burchinal et al., 2010; Deater-Deckard et al., 1996; Gallagher & Lambert, 2006; Volling & Feagans, 1995; Zaslow et al., 2010). Despite these inconsistencies, there is support for the possibility that structural quality features may support child social emotional development indirectly; moderating and/or mediating the effects of process quality features on child development. For example, teacher training was found to indirectly improve children's social emotional development through improved positive caregiving (NICHD Early Child Care Research Network, 2002).

Process quality features include, for example, quality of instruction and the level of warmth and support provided by caregivers and/or teachers. Process quality features are typically considered to be the most important contributions to positive child development (Yoshikawa et al., 2013), particularly in fostering cognitive and social development in childhood (Howes et al., 2008; Mashburn et al., 2008). Programs with an intense focus on SEL in early childhood are associated with increased social emotional development and process features such as supportive relationship with a teacher, emotional support, developmentally appropriate activities are all related to future prosocial and positive emotional outcomes and fewer maladjusted behaviours (e.g., Burchinal et al., 2011, Howes et al., 2008; Mashburn et al., 2008).

Educators in ECEC. The role and importance of teachers was of great consideration throughout this dissertation and in Study I, the integral role of teachers in the ECEC setting was discussed. Early childhood educators face various daily challenges in terms of promoting the development of children and often without formal guidance (Berkowitz & Grychy, 2000). Instead, teachers are required to make ad hoc or on-the-fly adjustments according to children's emotional and cognitive abilities; their ability to express empathy, guilt, and shame; and their ability to take the perspective of others (e.g., Johansson, 2002). The global concern to provide developmental opportunities, including moral and social emotional education in ECEC settings, shared by early childhood educators and caregivers, is supported in the research literature. Globally, educators recognise the importance of being a role model to their students for behaviour and attitudes that provide a moral message to teach discernment of right from wrong (Campbell, 2003); teachers regularly convey values in everyday social interactions with children - through observing and guiding their students (Thornberg & Oguz, 2013; Sanger & Osguthorpe, 2013). For example, the consensus among teachers in a study from the United States, Colombia, El Salvador, and Taiwan, was that preschools exist to support children's self-esteem, to promote cooperation, to allow children to become part of a group, and to foster independence (Killen et al., 2000), these are all values (e.g., self-esteem and cooperation) that are expressed through everyday practice and education in ECEC settings.

Swedish ECEC. At the onset, I mentioned that ECEC settings reflect the culture in a given society; the society's shared ethics, goals, and aspirations. As Studies II and III's samples were drawn from children attending preschools in Sweden, Study I described how Sweden's child welfare model relates to ECEC settings, how certain ethics are reflected in the design, goals, and practice of ECEC settings, and ultimately how culture is important to the support that ECEC settings provide children during their development.

This is a brief summary of this description. Sweden is wealthy in terms of global standards, has social welfare systems in common with the other Nordic countries (e.g., Norway, Finland, Denmark) in that it favours family policies, and generally aspires for an egalitarian society (Kristjansson, 2006; UNICEF, 2008). Swedish childcare policies include a child benefit allowance and paid parental leave to be shared by both parents (currently 480 days), as well as access to government-subsidised preschool for all children. ECEC is available to most families with children of one year of age and, based on preschool statistics from the Swedish National Agency for Education; the enrolment rate is high, with 76% of one to three-year-olds and 94% of four- and five-year-olds attending preschool (Swedish National Agency for Education, 2016), making it an important part of society. The Swedish ECEC is guided by a national curriculum for preschool, based on fundamental democratic values of present-day Swedish society and provides guidelines for preschool activities which aid in the acquisition of democratic values (Phillips & Lowenstein, 2011; Swedish National Agency of Education, 2010). From a pedagogical and psychological viewpoint, this includes supporting children in their learning and creativity in order to develop confidence in their own abilities, gain valuable knowledge and insights; and provide responsive caregivers who support children's emotional development and regulation, empathy, communication, and problem-solving skills (Study II).

The Three Ethics in a Swedish ECEC Setting. Earlier in this dissertation, I introduced Jensen's (2011) model involving a framework for moral development in which different cultures prioritise the use of three central ethics, namely the *Ethics of Autonomy, Community, and Divinity*, as guides to individuals' reasoning and action in everyday life. Study I put these ethics into a Swedish ECEC context. Each ethic is complex and can be reflected by different but related facets of moral development. In a Swedish context, in terms of ECEC, little research has focused specifically on children's moral reasoning or development as compared with children's social emotional competence and behaviours (e.g., prosocial, aggression, or social withdrawal). However moral development and social emotional competence intersect in many aspects (Trommsdorff, 2015).

As a complex global construct of emotion, empathy, for example, relates to moral development (Izard, 2009) and is a fundamental part of social emotional

competence; including the ability to take another person's perspective and to experience their feelings (Weissberg et al., 2015). Across this dissertation, I refer to the multidimensional construct of empathy as including: (i) emotional sharing, (ii) empathic concern, and (iii) affective perspective-taking (Decety & Svetlova, 2012). Similarly, social awareness (one of CASEL's domains/facets of SEL) is "…the ability to take the perspective of those with different backgrounds or cultures and to empathise and feel compassion" (Weissberg et al., 2015, p. 6); in other words, affective perspective-taking, to have empathic concern and to share emotions/have compassion for another person. In Study II, we measured social awareness as focusing specifically on an index of empathy, for example.

For individuals, the path of developing each ethic is dependent on the support found in a given culture for a particular ethic. For children, this development is supported in ECEC settings, as well as at home. In the Swedish ECEC settings, the ethics of Autonomy and Community are arguably most visible as mainstream Swedish society is predominantly secular. It can be argued that Sweden's social welfare system favouring family policies, and general aspirations for an egalitarian society, reflect an Ethic of Community which aims to facilitate the development of an Ethic of Autonomy. Specifically, Sweden's social welfare system offers all families monetary support (i.e., child allowance or *barnbidrag* in Swedish) and affordable and high-quality ECEC, regardless of the ability to pay, thus encouraging an Ethic of Community. In turn, this allows individuals to explore and develop in ways they personally value (i.e., Ethic of Autonomy).

Quality in Swedish ECEC Settings and Child Development. In this section of Study I, there was a summary and reflection on the empirical research literature of how Swedish ECEC settings support aspects of children's development. There are several indicators of good quality care in ECEC settings; for example, competency and experience of caregivers, low child-to-teacher ratios, and the physical environment (Swedish National Agency of Education, 2016). In the example below, the *quality* of ECEC settings was evaluated using observations and interviews such as the Early Childhood Environmental Rating Scale (ECERS; Harms & Clifford, 1980) and Belsky and Walker's (1980) checklist.

The Uppsala Longitudinal Study (ULS), explored the associations between ECEC quality and, broadly, social emotional development. Participants were largely middle class, included several waves of data collection, and followed an initial cohort of 123 infants, with follow-ups at age nine (N=96; time-point one) and at age 21 (N=85; time-point two). Generally, children who spent many hours in non-parental ECEC, compared with children who did not, had greater social competencies (e.g., extraversion, social competence with peers) and fewer maladjusted behaviours (e.g., social withdrawal, neuroticism) at time-point one (Bohlin et al., 2004), and fewer social anxiety and depression

symptoms at time-point two (Bohlin & Hagekull, 2009). Specifically, high *quality* ECEC settings were associated with positive emotional expressions at 48 months of age, and especially beneficial for children coming from homes with fewer resources (Hagekull & Bohlin, 1995).

II) The purpose of the second study was to examine selected facets of children's social emotional competence in relation to one another and then examine these social emotional competence facets in connection with indicators of child adjustment. The study design was cross-sectional and the sample consisted of children attending preschool in Sweden; all measurements in Study II were teacher-reported.

Several steps were taken prior to addressing this main study purpose. First, it was necessary to establish the initial psychometric properties of the measures used in Study II. The factor structures and reliability of the Preschool and Kindergarten Behavior Scales (PKBS, Merrell, 1994) and an unpublished empathy subscale from the affective-dimension of the Child Psychopathic Trait Inventory (CPTI): Callous Unemotional – CU (Colins et al., 2014) were examined with a Bayesian structural equation modelling (BSEM) approach (*H1* and *H2*). Once adequate psychometric properties were established, then analyses could be conducted to examine associations between these constructs (*H3* and *H4*).

Psychometric Hypotheses. (*H1*) The PKBS scales' factor structure, in this Swedish sample, would be similar to previous factor structures established in other samples living in other parts of the world, such as the United States (e.g., Merrell, 1995), whereby it was expected to identify a valid five factor model for the PKBS that consisted of three PKBS factors, namely social cooperation, social interaction and social independence, and two PKBS factors from the internalising/problem behaviours (i.e. social withdrawal and anxiety/somatic difficulties). The focus was on internalizing problems in particular in this study, because more is known about SEL (and by extension social emotional competencies) and externalizing problems (e.g., Talyor et al., 2017), and more knowledge is needed about social emotional competencies and internalizing problems.

(*H2*) The empathy scale factor structure was expected to consist of a one-factor model (e.g., Colins et al. 2014).

Substantive Hypotheses. (*H3*) There was an expected positive association between facets of social emotional competence in that children with greater PKBS scores on social cooperation, interaction and independence (indicators of relationship skills in the CASEL model) will have greater empathy-related responses (an indicator of social awareness in the CASEL model) (see Table 1).

(*H4*) There was an expected negative association between the indicators of social emotional competence in this study (social cooperation, interaction, independence, as well as empathy) and internalising problems (social withdrawal and anxiety scales).

In summary, *H3* and *H4* of Study II examined, in this sample, the theoretical expectation (i.e., CASEL model; Weissberg et al., 2015) that facets of social emotional competence (social cooperation, interaction, independence as well as empathy) will be positively associated with one another, and that such facets (social cooperation, interaction, independence as well as empathy) will be inversely associated with indicators of poor adjustment (social withdrawal, anxiety/somatic difficulties).

Table 1. CASEL domains relative to Constructs/Variables in Studies II and III

	Study II		**Study III**	
CASEL Domain	**Construct/ Variable**	**Measure**	**Construct/Variable**	**Measure**
relationship skills	social cooperation	PKBS	prosocial communication skills	Social Competence Scale-Teacher (SCS-T)
	social independence	PKBS		
	social interaction	PKBS		
self-management			emotional regulation	Social Competence Scale-Teacher (SCS-T)
social awareness	empathy	Callous–Unemotional (CU) dimension on the Child Psychopathic Trait Inventory (CPTI)*		

Notes: *The CU dimension was reverse scored to provide an index of empathy based on the examination of the item content and theoretical views of empathy used in this study. Developmental change is not examined in Studies II or III, however these findings are situated and discussed in light of a wider research literature and theory that examines growth, decline, and stability of social emotional competence over time (in and across developmental periods).

III) The purpose of the third study was to examine the theoretically expected positive associations between facets of social emotional competences (relationship skills as indexed by prosocial/communication skills as well as self-management as measured by emotional regulation skills; see Table 1) and a positive indicator of child adjustment, namely academic skills. Theoretically, academic skills are an outcome of several processes and SEL is an empirical

contributor to academic skills (Taylor et al., 2017), but academic skills are not part of the CASEL model. The instrument used in Study III was the teacher rated Social Competence Scale (SCS-T) and some prior studies have shown that the factor structure for this instrument consists of three factors, one for each subscale (Conduct Problems Prevention Research Group, 1995).

As in Study II, the design for Study III was also cross-sectional and measurement was teacher-reported. Important differences between Studies II and III are that the indicators of social emotional competence differ across the studies (measuring different facets of social emotional competence) and indicators of adjustment also vary (Study II are problem oriented and Study III are positive and academic oriented) and the sample for Study III is expanded to include children attending preschool in Pakistan as well as children attending preschool in Sweden. Both, Sweden and Pakistan, were part of a limited number of countries who have participated in the PATHS program. The addition of the Pakistani sample was made possible by collaboration with a Pakistani research group led by Dr. Ayesha Inam. The sample of Swedish children have some overlap between Studies II and III, however the sample for Study II (N = 115) was conducted earlier in a multi-stage cultural adaptation and intervention trial study and thus the sample was smaller relative to the sample in Study III which consisted of more children (N = 309).

As in Study II, several steps were taken before addressing the main purpose of Study III. A first step was to examine the factor structure of the Social Competence Scale-Teacher (SCS-T) Ratings (Conduct Problems Prevention Research Group, 1995) in these two samples, in this case confirmatory factor analysis (CFA) with structural equation modelling (SEM) was conducted for hypothesis 1 and multi-group analysis was conducted for hypothesis 2, and group difference tests were conducted to examine a research question. Unlike Study II, the confirmatory factor analysis was not conducted with a Bayesian approach in Study III.

Within Sample Psychometric Hypothesis.
(*H1*) It was hypothesised that a three-factor structure (prosocial/communication skills, emotional regulation skills, academic skills) would be found for the SCS-T in both samples. This hypothesis was motivated by some of the prior psychometric research literature on the SCS-T and CASEL's two social emotional competence indicators (prosocial/communication skills and emotional regulation skills) model, and a meta-analysis that connects social emotional competence and academic skills and performance (Taylor et al., 2017).

Within Sample Substantive Hypothesis.
(*H2*) It was hypothesised, based on a similar rationale as hypothesis 1 (H1), that within each sample, associations between prosocial/communication

skills, emotional regulation skills, and academic skills (as measured by the SCS-T) would be positive.

Comparative-Based Hypothesis and Research Question.
(*H3*) It was hypothesised that measurement invariance for the SCS-T scale would be identified and thus allow for group-based comparisons of teacher-reported social emotional competence and academic skills (Social Competence Scale, SCS) in these two samples of children growing up with varied economic resources/conditions, cultural norms, and educational experiences.

(*RQ*) No hypothesis was posed for the final comparative step but, instead, a research question was examined in Study III; in which for those items or scales that invariance was found, would there be group mean level differences in comparable aspects of social emotional competence across children in the samples?

Participants

Study II and III Swedish samples.
The average age of participants (Study II, *N*=115 and Study III, *N*=309) was approximately four and a half years old (*M* = 4.56, *SD* = .55), and were 53% male and 47% female. Of these participants, approximately 25% and 36% (Study II and III respectively) had a language other than Swedish, as their mother-tongue- language and/or were multilingual. However, the median total income from employment and business income in 2016 (the time of data collection) for those living in two of the three recruited municipalities was below the regional median, and one of the three municipalities was above the regional median (Statistics Sweden, 2018).

Study III Pakistani sample.
Participants in Study III consisted of preschool children (*N*=396) from different private sector preschools in Rawalpindi and Islamabad cities in Pakistan. The children were approximately four years old (*M* = 4.18, *SD*=.10), and were 49% male and 51% female. No other demographic information was collected on this sample, as this information was not included in the original study design and procedures carried out by Pakistani collaborators (led by Dr. Iman).

Measures

Measurements used in Studies II and III were teacher-rated surveys, thus all data collected for this dissertation was collected by our child participants' teachers. On top of the teachers' regular role of promoting social, emotional and moral development of children, they volunteered their time and efforts to make this data collection possible. Further, the translation process of the SCS-

T (Study III), into Urdu, required a structured examination and cultural equivalence which required several teachers, during different stages of this process, to volunteer their time and were essential to the study (Inam et al., 2015).

Study II

The Preschool and Kindergarten Behavior Scale (PKBS) is a behaviour rating scale designed specifically for preschool aged children. The wider scale is designed to assess an overall 35 typical social skills and 45 problem behaviours. Of the PKBS' two major scales (relationship/social skills and problem behaviours), 45 items representing five subscales (i.e., PKBS scales - social cooperation, interaction, independence and PKBS scales internalising behaviour/problems – social withdrawal and anxiety/somatic problems) were rated by the children's teachers on a four-point Likert scale ranging from (0 = never true to 3 = often true). Items used in Study II are listed in the article (Table 1. Questionnaire items and sample items, see Study II article).

The PKBS has a strong theoretical basis and has shown good to excellent psychometric properties (e.g., Cronbach's alpha and Spearman-Brown split-half reliability coefficients ranging from .94 to .97 for total scores) and represents important indices for the constructs of social emotional competence (Merrell, 1994). Translated versions of the PKBS have shown similarly high internal consistency (i.e. Cronbach's alpha) on the relationship/social skills and problem behaviour scales (Persian - .87 & .92, respectively, Shokri et al., 2013; Spanish - .93 & .96, respectively, Carney & Merrell, 2002) and additionally there exists support for content and factorial validity extracting similar factors (e.g. social cooperation, social interaction, social independence, social withdrawal and anxiety/somatic difficulties; Merrell, 1994; Shokri et al., 2013) and statistically significant factor loadings (Muñoz et al., 2011). Teacher reported translations of the PKBS (Merrell, 1994), have illustrated good to very good values for internal consistency and expected associations, for example, in young Angolan and Portuguese children (Major et al., 2021).

During the time period in which Study II was conducted, Colin and colleagues' (2014) Child Psychopathic Trait Inventory (CPTI) was in development in response to a shortage of instruments to measure psychopathic traits in young children (i.e., preschool aged). Included in the CPTI are several dimensions, one being an affective dimension of the psychopathic personality in childhood, described as Callous-Unemotional (CU) which captures, among other traits, lack of affective-empathy responses in young children using emotional responses to the affective state of another child, and sharing of emotions (Colins et al., 2014).

The CPTI has shown good factorial validity (RMSEA < .08, CFI > .95), with empathy-items loading on a single factor (item-loadings between .70-.96) and good internal consistency (α = .95; Colins et al., 2014). With few reliable and

valid Swedish instruments to measure young children's empathy (i.e., the ability of a child to take another's perspective and experience and understand another's feelings), these five reverse-scored items from Colins and colleagues' CPTI's CU dimension were used in Study II as an index of empathy. These five reverse-scored empathy items can be broadly defined as awareness and sharing of, and response to, the feelings of others (Colin et al., 2014). Moreover, this reverse-scored subscale captures aspects of affective-empathy involving a directive or expression of a feeling or behaviour. These items were completed by participating children's teachers and were rated on a five-point Likert scale from (1 = strongly disagree to 5 = strongly agree). These items are listed in Study II (i.e., *Table 1. Questionnaire items and sample items*).

Study III

The Social Competence Scale - Teacher Version (SCS-T) contains three subscales: Prosocial/Communication Skills (consisting of eight items), Emotional Regulation Skills (consisting of 10 items), and Academic Skills (consisting of seven items). In addition to the subscale scores, a score for the combined Prosocial/Communication items and Emotional Regulation items can be calculated, and a total score on all 25 items can also be reported. Individual subscale scores, the combined score, and the total score are calculated as the mean of responses for a scale.

Each item on the SCS-T describes a behaviour that a child may display at school. Examples include: "Can wait in line patiently, when necessary," "Works well in a group," and "Can give suggestions and opinions without being bossy." The teacher assesses how well each statement describes the child. Responses are coded on a five-point Likert scale: "Not at all (0)," "A little (1)," "Moderately well (2)," "Well (3)," and "Very well (4)."

The SCS-T has been used primarily in English speaking countries (e.g., United States and Australia). In these studies, the SCS-T subscales (i.e., prosocial skills, emotion regulation skills, and academic skills subscales) and total score combining all subscales, typically show good internal consistency of a three-factor model (i.e., alpha coefficients of .80 or higher [U.S. studies: Conduct Problems Prevention Research Group, 1995; Corrigan, 2002; Stormont et al., 2019] [Australian studies: Duncombe et al., 2012; Havighurst et al., 2014]).

Procedure

Swedish participants, for both Study II and III's samples, were derived from cross-sectional data collection conducted as part of the cultural adaptation of PATHS to a Swedish preschool context (Eninger et al., 2021). The wider aim of the cultural adaptation process was, in part, to investigate if constructs that the SEL intervention attempted to change had similar relations in Swedish

relative to U.S. children (Ferrer-Wreder et al., 2021). The dataset was part of PATHS' wider assessment battery and was collected before the cultural adaptation of the intervention and before the intervention trial took place.

For this wider study, three municipalities within a large Swedish city were approached to participate, and all municipalities accepted (Eninger et al., 2021). Participating municipalities consisted of urban and suburban neighbourhoods with 17% to 60% of residents coming from foreign backgrounds (i.e., born abroad or born in Sweden with both parents born abroad; based on information provided from the municipalities at the time the study took place); the number of residents coming from foreign backgrounds, in the whole of Sweden, is 34% (Statistics Sweden, 2021). From these municipalities, 26 publicly or privately administered preschools were recruited to be in the study (convenience sampling procedure across two data collection waves). Within participating schools, individual child inclusion criteria were that the children were four to six years old, wished to participate, and that their parents/guardians consented to have their children participate. A Swedish regional ethics board approved these studies (dnr. 2012/1714-31/5). If children wished to end their study participation at any time, for any reason, they were informed that could do so. The child assessment was also broken into two shorter segments in order to make the assessment time period developmentally appropriate for participating children and fit with the school's wider schedule of activities.

As part of the wider study, schools received, by post, one structured survey per participating child which was to be completed by the child's teacher. Each survey asked about the competencies and adjustment of the children participating in the study. Once the teachers had completed the surveys, schools returned the surveys in pre-stamped envelopes to the research team. As compensation for filling out the surveys, each teacher received a movie voucher, and each preschool received a gift certificate to a bookstore for 500 Swedish Crowns.

In both studies (II and III), relationship skills were indexed by positive social behaviours and skills that show that a child is able to get along with others by being generous, thoughtful, and normative in social interchanges (i.e. social cooperation, Study II); can comfort another child who appears upset and can ask for help and apologise when appropriate (i.e. social interaction, Study II); have social flexibility and understanding of social life and rules (e.g. social independence, Study II); and finally, a child who can listen to others, and is friendly, helpful and cooperative (i.e. prosocial communication skills, Study III) (Thomson et al., 2021).

In this way, social awareness (Study II) was indexed as focusing specifically on an index of empathy. As a complex global construct of emotion, empathy relates to moral development and reasoning (Izard, 2009) and reflective of

social emotional development, includes the ability to take another person's perspective and to experience their feelings (Weissberg et al., 2015). Empathy, defined using a concise and multidimensional construct, includes: (i) emotional sharing, (ii) empathic concern, and (iii) affective perspective-taking (Decety & Svetlova, 2012). Empathy is complex in itself as a construct and plays a positive role in the formation of close friendships, and is associated typically with increased health benefits, and well-being throughout the lifespan (Izard, 2009).

Neither the responsible decision-making nor self-awareness domains within the CASEL model were indexed directly by any of the constructs included within the studies in this dissertation.

Study III

Swedish data waves. Specifically, Study III's sample combined two cross sectional data collections that were part of the cultural adaptation process of PATHS with baseline (pre-test data) collected as part of the wider intervention trial.

Pakistani data wave. Data considered in this study were cross-sectional, and coming from the pre-test of an intervention trial of preschool PATHS (outlined above and similar to the data collected as part of the Swedish sample in Study III).

As noted, Study III was conducted in collaboration with a Pakistani research group. Pakistani participants for Study III's sample were derived from cross-sectional data collection conducted as part of the cultural adaptation of PATHS to a Pakistani preschool context (Inam et al., 2015). The wider aim of the cultural adaptation process was, in part, a cultural adaptation process to investigate if constructs that the SEL intervention attempted to change had similar relations in Pakistani relative to U.S. children (Inam et al., 2015). The dataset was collected before the cultural adaptation of the intervention and before the intervention took place.

For this wider study, the sample was selected using purposive sampling technique. Seven privately administered preschools were recruited to be in the study, from urban middle-class neighbourhoods within the twin cities of Rawalpindi and Islamabad. Within participating schools, individual child inclusion criteria were that the children were four to six years old, wished to participate, and that their parent/guardian consented to have their children participate. The Advanced Study and Research Board (AS & RB) of Quaid-i-Azam University Islamabad Pakistan approved this study.

As part of this wider study, 450 questionnaires were distributed to schools; of these, 54 questionnaires were discarded due to missing data (only completed

questionnaires were retained). Each survey asked about the competencies and adjustment of the children participating in the study. Once the teachers had completed the surveys, schools returned the surveys to the research team. As compensation for filling out the surveys, each preschool was offered training in classroom management.

Translation

Study II and III

Regarding Swedish editions of the PKBS (Study II) and SCS-T (Study III), both translations were guided by committee approaches (i.e., van de Vijver & Leung's approach [1997] guided translations). For the translation of the SCS-T (Study III) from English into Urdu, Brislin's approach [1980] guided the translation process.

Initial Swedish translations, for Studies II and III, were conducted by a licensed psychologist familiar with the scales and assessment, and fluent in Swedish and English. Translated items were reviewed by another researcher with a PhD in psychology, and fluent in Swedish and English, to ensure the true meaning of the items were preserved in the original translation (i.e., translation for meaning was prioritised over a literal translation).

Due to a number of dissimilarities between English and Urdu expressions, used by the teachers, relating to children's behaviours and social emotional competence (Inam et al., 2015), the translation of the SCS-T (Study III), into Urdu, required a thorough surface and deep structure examination and exploration of cultural equivalence (Inam et al., 2015). The process used was as follows:

Step I: Evaluation of scale-item-relevance for Pakistani children. A group of experts, comprising preschool teachers and academics, reviewed and evaluated the relevance of the items to preschool children in Pakistan. Items were found to be relevant to the behaviours of children usually observed in Pakistani schools.

Step II: Forward translation of items. Secondly, two school teachers (having Master of English and Education degrees), and three PhD scholars (working in the field of developmental psychopathology and social psychology), all proficient in both English and Urdu, translated the items whilst keeping in mind the conceptual equivalence.

Step III: Committee approach. Next, a three-member committee reviewed and evaluated the most appropriate translation of the scale. The members were researchers and faculty members in the discipline of Psychology and having

adequate experience in item construction and translation.

Step IV: Back translation of items. In this step, three bilingual experts were asked to back translate the Urdu version of the scale selected through committee approach. The minimum education of these bilinguals was Masters, and they were not familiar with the original version of the scale.

Step V: Final items selection. Lastly, a committee of three members evaluated the three back translations and compared the original version and back translation. The items, which conveyed the closest meanings to the original scale, and were deemed most appropriate, were retained. The committee recommended this final version for further use in research.

Statistical Analyses

All analyses were performed using SPSS 23.0 and Mplus 7.4 (Muthén & Muthén, 1998-2017).

Study II

Factorial validity, internal consistency and latent relationships were established and explored in stages: (1) evaluated a five-factor model of the PKBS items, (2) compared the five-factor model with a more parsimonious two-factor model (e.g. social skills/positive behaviours and problem/internalising behaviours), (3) used information about item performance to revise the five-factor model, (4) evaluated a one-factor empathy model, (5) examined relations between social cooperation, interaction, independence, social withdrawal and anxiety/somatic problems; and empathy by combining the revised five-factor PKBS model and one-factor empathy model and lastly, (6) assessed the internal consistency of the PKBS and empathy scales.

Confirmatory Factor Analysis (CFA). Consistent with theory and prior psychometric studies of the PKBS, two measurement models (a five-factor and two-factor model) for the PKBS were evaluated using CFA with a robust maximum likelihood estimator. The five-factor model included the latent factors: social cooperation, social interaction, social independence, social withdrawal, and anxiety/somatic problems. The two-factor model collapsed social cooperation, interaction, and independence into a social competence factor and social withdrawal and anxiety/somatic problems into an internalising behaviour factor. Model fit indices included the chi-square goodness of fit test, the root mean square error of approximation (RMSEA), the comparative fit index (CFI), and the standardised root mean square residual (SRMR). Good fit was defined by a chi square p-value $\geq .05$, RMSEA $\leq .05$, CFI $\geq .95$, and SRMR $\leq .05$.

Bayesian Structural Equation Modelling (BSEM). BSEM provides a novel approach to CFA in which the restrictive assumptions of zero factor cross-loadings and zero residual covariances can be relaxed without abandoning the original measurement theory (Muthén & Aspourohov, 2012). In Bayesian analysis, parameters are variables that have distributions. For each parameter, a prior distribution that quantifies prior knowledge about the parameter is updated with estimates based on observed data to generate a posterior distribution that provides updated knowledge about the parameter (see Zyphur & Oswald, 2015). In BSEM, the assumptions of zero cross-loadings and residual covariances can be relaxed by specifying prior distributions that have means of zero (reflecting the measurement theory) but small variances that account for plausible uncertainty about these parameters (Muthén & Aspourohov, 2012).

For BSEM model testing, a posterior predictive checking procedure was used (Muthén & Aspourohov, 2012). In this procedure, estimated model parameters are used to generate many iterations of replicated data. This replicated data is then compared to the observed data. Chi square values are used to compare the probability of the observed data to the probability of the replicated data. If the model has good fit, the probability of the observed and replicated data will be equivalent, and the chi square difference will be zero (Muthén & Aspourohov, 2012). Thus, poor model fit was indicated by a 95% confidence interval with a positive lower limit and posterior predictive *p*-value (PPP) < .05 (Muthén & Aspourohov, 2012). To compare different models, the deviance information criterion (DIC) and Bayesian information criteria (BIC) were used. For both DIC and BIC, smaller scores indicate better model fit.

Study III

Factorial validity and internal consistency were established and explored (in each sample separately), in stages: to examine hypotheses 1 and 2, we (1) evaluated a three-factor model of the SCS-T items; (2) compared a one-factor global model, and (3) a bi-factor model that included the three specific factors and the global factor, and lastly (4) assessed the internal consistency of the SCS-T scales. Tested models were evaluated using structural equation modelling (i.e., SEM) based CFAs, and not a Bayesian approach as in Study II. For all models, we used a robust means-and-variance-adjusted weighted least squares (WLSMV) estimator to accommodate the Likert-scale item data, and we scaled the latent factors using the fixed factor method in which the variance of each latent factor is fixed at 1.00 (Little, 2013).

Once we had established good factorial validity in each sample, we examined hypothesis 3; testing for measurement invariance of the SCS factor structure across samples (i.e., Swedish and Pakistani samples). To test the research question posed, the SCS scores, which demonstrated invariance across the samples, were examined to determine if there were significant latent mean

level differences (i.e., z-score comparisons) in social emotional competence as measured by the SCS-T.

Results

Study II

Preliminary analysis tested for normality and missing data; at the scale level kurtosis and skewness were approximately normal and missing items were in the range of 0% to 7%. Little's MCAR test: χ^2 (837) = 814.22, p = .71. Full information maximum likelihood was used to handle missing data. Both PKBS models and PKBS with empathy model were rejected by the χ^2 test ($p < 0.001$), and the fit indices failed to meet the suggested cut off values (CFI < 0.95 and RMSEA > 0.08) (see Study I's Table 2. *Model fit and model comparison*). Given lack of theoretical justification, relatively small sample size, and the inherent possibility of capitalising on chance features of the sample, model respecification was not carried out using model modification indices. Instead, we turned to BSEM to locate the source of model misfit (hypotheses 1 and 2; described below).

Psychometric hypotheses testing.

(H1) We estimated the PKBS five-factor and two-factor models using the Bayes estimator in Mplus and a series of prior specifications for the cross-loadings and residual covariances for the standardised item scores (Asparouhov, Muthén, & Morin, 2015). First, we tested baseline models using Mplus's default non-informative priors (Models 1a, 2a, and 3a). Non-informative priors specify that before the data were collected no candidate parameter values were more probable than others (Zyphur & Oswald, 2015). In Mplus, the default non-informative prior for factor loadings is normally distributed with $\mu = 0$ and $\sigma^2 = 10^{10}$ (Asparouhov & Muthén, 2012). The default non-informative prior for residual covariances has an inverse gamma distribution with $\mu = -1$ and $\sigma^2 = 0$.

Second, we added small-variance informative priors for the cross-loadings in the models (Models 1b, 2b, and 3b). The informative cross-loading priors were normally distributed with $\mu = 0$ and $\sigma^2 = .01$, in line with Asparouhov et al. (2015). To determine if the choice of prior variance influenced the results, we conducted a sensitivity test by varying the prior variance ($\sigma^2 = .001$, $\sigma^2 = .05$, $\sigma^2 = .1$) and monitoring the speed of convergence as an indicator of model identification.

Third, we added small-variance informative priors for the residual variances and covariances in the model (Models 1c, 2c, and 3c). These priors had an inverse Wishart distribution with $\mu = dD$ and $\sigma^2 = d$, where d was the degrees of freedom of the distribution and D was the residual variance or covariance estimate from the baseline model (Asparouhov et al., 2015). Because residual covariances were fixed to zero in the baseline model, residual covariance priors had $\mu = 0$. We specified the priors using a value of $d = 40$, in line with Asparouhov et al. (2015). We conducted a sensitivity test by varying the prior variance ($d = 25$, $d = 35$, $d = 45$) and monitoring the speed of convergence. From the entire set of BSEM models 1a to 3c, we selected the best-fitting model.

Study II's model fit statistics are presented in Table 2. As shown in the table, the five-factor PKBS models with non-informative priors (Model 1a) and small-variance cross-loading priors (Model 1b) were rejected by the data (PPP = 0.000) with positive 95% PP lower limits. However, specification of small-variance residual covariance priors resulted in a five-factor model (Model 1c) that provided good convergence and adequate fit to the data, with PPP = 0.053 and a negative 95% lower PP limit. None of the two-factor PKBS models (Models 2a-2c) provided adequate fit to the data. In line with our expectations to identify a valid five factor model, we therefore retained Model 1c for further analysis.

Table 2. Study II model fit and model comparison

Model	#	pD	2.5% PP Limit	97.5% PP Limit	PPP	DIC
PKBS Five-Factor Model						
1a. Noninformative	190	437.718	704.717	971.514	.000	12455.651
1b. Informative (cload)	370	481.073	577.055	855.429	.000	12353.782
1c. Informative (cload + rcov)	1360	518.336	−31.998	276.420	.053	11651.821
PKBS Two-Factor Model						
2a. Noninformative	181	438.200	984.120	1257.863	.000	12791.851
2b. Informative (cload)	226	479.959	766.922	1048.874	.000	12588.834
2c. Informative (cload + rcov)	1216	512.370	29.966	330.168	.011	11717.935
PKBS Bifactor Model						
3a. Noninformative	236	438.226	555.470	833.322	.000	12289.423
3b. Informative (cload)	461	544.548	202.445	494.188	.000	11964.437
3c. Informative (cload + rcov)	–	–	–	–	–	–
Modified PKBS Models						
4. Five-Factor (cload + rcov)	723	398.026	−61.069	133.733	.225	7869.819
5. Two-Factor (cload + rcov)	621	386.191	−25.760	168.622	.071	7903.365
6. Bifactor (cload + rcov)	786	416.031	−68.817	135.061	.240	7880.387
Empathy One-Factor Model						
7a. Noninformative	20	49.118	−7.080	50.481	.069	1410.185
7b. Informative (rcov)	30	48.756	−23.424	35.048	.372	1394.507
Modified PKBS Five-Factor Model and Empathy One-Factor Model						
8. Informative (cload + rcov)	967	468.686	−75.190	153.421	.246	9090.647

Note. $N = 115$; # = number of free parameters; pD = estimated number of parameters; PP limit = posterior predictive limit; PPP = posterior predictive *p*-value; DIC = deviance information criterion; cload = crossloadings; rcov = residual covariances.

Note. From "Psychometric Properties of a Swedish Translation of the Preschool and kindergarten Behavior Scales (PKBS): A Bayesian Structural Equation Modeling Analysis" by Thomas,

Following inspection of the factor loadings, the following items did not load onto their respective factors: ST14, ST15, ST17, ST19, ST20, SD25, SD28, SD31, SD32, SD33, SD 34, SW68, AX69, and AX75. Guided by these empirical findings and substantive considerations, we revised the five-factor measurement model by removing the identified items (Model 4). The revised model (i.e., having small variance priors for cross loadings and residual covariances), provided acceptable fit to the data, had salient factor loadings (λ =0.37 to 0.94) on the overall factors (ω =0.73 to 0.93) with small factor cross-loadings (less than .02), and none of the factor correlations were high enough to suggest the lack of differentiation between any two factors in this sample.

(*H2*) We evaluated the one-factor empathy model using the same procedure used for the PKBS items. That is, after testing a baseline model using Mplus's default non-informative priors (Model 7a), we added small-variance informative priors for the residual variances and covariances in the model. In this case, however, after varying the prior variance (d = 25, d = 35, d = 40), we found that a larger d (d = 45) yielded a PPP value greater than .05 and therefore considered that model to be the model of interest (Asparouhov et al., 2015). In line with our expected factor structure, this model (Model 7b) had fast convergence and adequate fit to the data, with PPP = 0.372 and a negative 95% lower PP limit. All five items loaded substantially (λ =0.61 to 0.87) on the overall factor (ω =0.84). Lastly, we added the empathy items to the final PKBS model (Model 4), modelling the empathy scale as a latent variable. This model (Model 8) had six factors, including the five-factor PKBS model and one-factor empathy model. This model provided an adequate fit to the data, with PPP = 0.246 and a negative 95% lower PP limit.

Table 2 presents the parameter estimates and 95% credibility intervals for Model 8. The parameter estimates are medians from the posterior distribution and represent the most probable parameter value. The 95% credibility interval for a parameter estimate is interpreted to mean that the probability that the parameter lies in the interval is .95 (Kaplan & Depaoli, 2013). Thus, the Bayesian parameter estimates provide direct probabilistic statements about the parameters and are not based on hypothetical replications of the data as in the frequentist tradition (Zypher & Oswald, 2013). As shown in Table 3, the factor loadings ranged from .39 to .97, all of the factor cross-loadings were small (less than .02). Composite reliabilities for individual scales, as indexed by McDonald's omega (ω), were good (ω in the range of .73 to .92), providing support for internal consistency.

Table 3. Study II factor loadings, factor correlations, and composite reliability

	SC	ST	SD	SW	AX	EM
PKBS Items						
1.	.76 [.48, 1.05]	.02 [−.12, .15]	.03 [−.11, .16]	−.02 [−.15, .11]	−.03 [−.15, .09]	.00 [−.13, .14]
2.	.78 [.50, 1.06]	.02 [−.12, .15]	.04 [−.10, .16]	.00 [−.13, .13]	.03 [−.09, .15]	.01 [−.12, .15]
3.	.68 [.39, .97]	.02 [−.12, .15]	−.00 [−.13, .13]	−.03 [−.16, .10]	−.03 [−.14, .09]	.02 [−.12, .15]
4.	.82 [.54, 1.09]	−.01 [−.15, .12]	−.00 [−.13, .13]	−.02 [−.14, .11]	.01 [−.11, .13]	−.02 [−.15, .12]
6.	.71 [.41, 1.01]	.01 [−.13, .14]	−.00 [−.13, .13]	.02 [−.11, .15]	.02 [−.10, .14]	.01 [−.12, .15]
7.	.97 [.69, 1.23]	−.02 [−.15, .12]	−.05 [−.18, .08]	.03 [−.10, .15]	.01 [−.10, .13]	−.03 [−.15, .11]
8.	.74 [.44, 1.03]	−.01 [−.14, .13]	−.01 [−.14, .12]	−.01 [−.14, .12]	−.03 [−.15, .09]	.00 [−.14, .13]
9.	.66 [.35, .96]	.02 [−.12, .16]	−.00 [−.14, .13]	−.01 [−.14, .12]	−.02 [−.15, .10]	.02 [−.12, .15]
10.	.84 [.58, 1.11]	−.00 [−.14, .13]	.04 [−.10, .16]	−.01 [−.14, .12]	−.01 [−.12, .11]	.00 [−.13, .13]
11.	.87 [.61, 1.14]	−.01 [−.14, .13]	.00 [−.12, .13]	−.00 [−.13, .13]	−.03 [−.14, .09]	−.01 [−.14, .12]
12.	.75 [.45, 1.04]	.02 [−.12, .16]	.00 [−.13, .13]	.03 [−.10, .15]	.06 [−.06, .18]	.03 [−.11, .16]
13.	.04 [−.10, .19]	.82 [.54, 1.10]	.00 [−.13, .14]	.02 [−.11, .15]	.03 [−.09, .15]	.02 [−.13, .15]
16.	.00 [−.13, .14]	.55 [.24, .87]	.03 [−.10, .17]	−.03 [−.16, .10]	−.01 [−.13, .12]	.01 [−.13, .14]
18.	.01 [−.13, .14]	.72 [.43, 1.01]	.02 [−.11, .15]	−.03 [−.16, .10]	−.04 [−.16, .08]	−.01 [−.14, .13]
21.	−.01 [−.15, .13]	.85 [.55, 1.13]	−.03 [−.16, .11]	.03 [−.10, .16]	.03 [−.09, .15]	.02 [−.12, .16]
23.	−.00 [−.14, .13]	.66 [.36, .97]	.00 [−.13, .13]	−.01 [−.14, .12]	−.02 [−.14, .10]	.01 [−.13, .14]
26.	−.01 [−.15, .12]	−.01 [−.14, .12]	.71 [.36, 1.01]	.02 [−.11, .16]	.04 [−.08, .17]	−.01 [−.14, .12]
27.	.03 [−.11, .16]	.02 [−.11, .15]	.76 [.49, 1.03]	−.01 [−.14, .13]	−.01 [−.14, .11]	.02 [−.11, .14]
29.	−.01 [−.14, .12]	−.01 [−.14, .13]	.85 [.56, 1.12]	−.02 [−.15, .11]	−.02 [−.14, .11]	.01 [−.12, .14]
30.	.02 [−.11, .15]	.01 [−.12, .14]	.77 [.50, 1.03]	−.02 [−.16, .11]	−.05 [−.16, .08]	−.01 [−.13, .12]
62.	−.03 [−.16, .11]	−.02 [−.15, .11]	.00 [−.13, .14]	.49 [.17, .81]	−.02 [−.16, .11]	−.02 [−.15, .11]
63.	.03 [−.10, .16]	.02 [−.11, .15]	.02 [−.12, .15]	.41 [.08, .74]	.01 [−.12, .15]	.01 [−.11, .15]
64.	−.00 [−.14, .13]	−.01 [−.15, .12]	−.08 [−.22, .07]	.73 [.42, 1.04]	−.01 [−.15, .12]	−.00 [−.14, .13]
65.	−.03 [−.16, .11]	−.03 [−.16, .10]	.00 [−.13, .14]	.63 [.33, .93]	−.01 [−.14, .13]	−.04 [−.17, .09]
66.	.01 [−.12, .14]	.02 [−.11, .14]	−.00 [−.13, .13]	.61 [.29, .90]	−.00 [−.14, .13]	.01 [−.11, .14]
67.	−.00 [−.14, .13]	.02 [−.12, .15]	.03 [−.11, .17]	.73 [.42, 1.04]	.07 [−.08, .22]	.02 [−.11, .15]
70.	−.01 [−.14, .12]	−.01 [−.14, .12]	−.01 [−.14, .12]	.01 [−.13, .14]	.39 [.11, .66]	−.02 [−.15, .11]
71.	.01 [−.12, .13]	−.01 [−.14, .12]	−.03 [−.17, .10]	.02 [−.11, .16]	.93 [.73, 1.14]	−.01 [−.14, .12]
72.	.01 [−.12, .13]	.02 [−.11, .14]	.02 [−.11, .15]	−.01 [−.14, .13]	.89 [.66, 1.11]	.03 [−.10, .16]
73.	−.02 [−.14, .11]	−.01 [−.14, .11]	−.01 [−.14, .12]	.02 [−.12, .16]	.52 [.25, .79]	−.01 [−.14, .11]
74.	.01 [−.12, .14]	.03 [−.10, .16]	−.00 [−.13, .12]	−.01 [−.15, .12]	.39 [.10, .67]	.01 [−.11, .14]
Empathy Items						
A.	−.03 [−.16, .11]	.03 [−.10, .16]	−.00 [−.13, .12]	.01 [−.12, .13]	−.01 [−.13, .12]	.74 [.43, 1.03]
B.	.03 [−.11, .16]	.03 [−.13, .15]	.00 [−.13, .13]	.01 [−.12, .13]	.03 [−.10, .15]	.85 [.59, 1.12]
C.	−.02 [−.15, .12]	−.01 [−.15, .13]	−.01 [−.14, .12]	.01 [−.11, .13]	.01 [−.11, .14]	.55 [.23, .87]
D.	.04 [−.10, .18]	.02 [−.12, .16]	.03 [−.10, .16]	−.03 [−.16, .09]	−.02 [−.14, .10]	.62 [.33, .92]
E.	.02 [−.12, .15]	.01 [−.13, .15]	.02 [−.12, .15]	−.02 [−.13, .10]	−.02 [−.14, .10]	.54 [.23, .85]
Factor Correlations						
SC	–	.90 [.77, .98]	.72 [.48, .92]	−.67 [−.87, −.40]	−.32 [−.62, .01]	.86 [.68, .98]
ST		–	.71 [.43, .96]	−.62 [−.86, −.29]	−.24 [−.58, .11]	.94 [.80, .99]
SD			–	−.82 [−.96, −.58]	−.53 [−.85, −.18]	.62 [.29, .98]
SW				–	.78 [.47, .98]	−.53 [−.83, −.15]
AX					–	−.13 [−.48, .27]
EM						–
Composite Reliability						
ω	.92 [.89, .94]	.81 [.71, .87]	.82 [.68, .89]	.73 [.59, .82]	.73 [.60, .81]	.77 [.63, .84]

Note: $N = 115$. SC = social competence. ST = social interaction. SD = social independence. SW = social withdrawal. AX = anxiety. EP = empathy. Bold = primary loading. ω = McDonald's omega. Bayesian 95% credibility intervals are in brackets.

Note. From "Psychometric Properties of a Swedish Translation of the Preschool and kindergarten Behavior Scales (PKBS): A Bayesian Structural Equation Modeling Analysis" by Thomas, Eichas, Eninger & Ferrer-Wreder, 2021, *Scandinavian Journal of Educational Research*. doi: 10.1080/00313831.2020.1788152

Substantive hypotheses testing.

(*H3*) With respect to the factor correlations, strong expected positive associations existed among all social emotional competence latent factors: social cooperation, interaction and independence (indicators of relationship skills in the CASEL model), and empathy (indicator of social awareness in the CASEL model). A particularly strong latent correlation was found between the social interaction and empathy scales – lending support for considering empathy as a construct closely related to other social emotional competencies (Björkqvist et al., 2000).

(*H4*) Additionally, strong expected negative associations existed among internalising problems (i.e., social withdrawal and anxiety/somatic difficulties) and indicators of social emotional competence (i.e., social cooperation, interaction, independence, and empathy); with the exception of the relation between empathy and anxiety. Although the association between empathy and anxiety was negative, the credibility interval indicated that a small positive association could not be ruled out (these findings are addressed later in the Discussion section of this dissertation).

Study III

Consistent with theory and some of the prior psychometric studies of the SCS-T, three measurement models (a three-factor, global one-factor and bi-factor model) for the SCS-T were evaluated using structural equation modelling based CFAs.

Within Sample Psychometric hypothesis testing.

(*H1*) To test whether the same three factor structure (i.e., prosocial/communication skills, emotional regulation skills, academic skills) could be identified in both the Swedish and Pakistani samples, we compared a three-factor, global one-factor, and bi-factor model. The three-factor model included the latent factors of: prosocial, emotion regulation, and academic skills. The global one-factor model collapsed prosocial, emotion regulation, and academic skills into one global factor of social and emotional competence. And the bi-factor model implied that there is shared variance among all items and domain-specific shared variance among the prosocial items, among the emotion regulation items, and among the academic skills items. Model fit indices included the chi-square goodness of fit test, the root mean square error of approximation (RMSEA), the comparative fit index (CFI), and the standardised root mean square residual (SRMR). Good fit was defined by a chi square p-value $\geq .05$, RMSEA $\leq .05$, CFI $\geq .95$, and TLI $\geq .95$. Chi square difference tests were used to compare nested models.

Table 4 presents Study III's model testing and model comparison results. In the Swedish sample, the 1-factor model did not meet any criteria for good fit, whereas both the 3-factor and bifactor models had acceptable CFI and TLI values but not RMSEA values. Chi square difference testing indicated that the bifactor model fit better than the 3-factor, which fit better than the 1-factor model. In the Pakistani sample, all three models had acceptable CFI and TLI values but not RMSEA values. Similar to the Swedish sample, chi square difference testing indicated that the bifactor model fit better than the 3-factor, which fit better than the 1-factor model.

Table 4. Study III model fit and model comparison

Model	Model Fit							Model Comparison			
	χ^2	df	*p*	CFI	TLI	RMSEA	CFit	vs.	χ^2_{diff}	df	*p*
Sweden (n = 307)											
1. 1-factor	1476.983	170	< .001	.937	.930	.158 [.151, .166]	< .001	2	194.947	3	< .001
2. 3-factor	948.244	167	< .001	.962	.957	.123 [.116, .131]	< .001	3	303.583	20	< .001
3. Bifactor	546.051	147	< .001	.981	.975	.094 [.086, .103]	< .001	--	--	--	--
Pakistan (n = 396)											
4. 1-factor	659.764	170	< .001	.973	.970	.085 [.078, .092]	< .001	5	90.049	3	< .001
5. 3-factor	540.713	167	< .001	.979	.977	.075 [.068, .082]	< .001	6	132.088	20	< .001
6. Bifactor	418.373	147	< .001	.985	.981	.068 [.061, .076]	< .001	--	--	--	--
Multigroup (n = 703)											
7. Conf.	958.276	294	< .001	.983	.978	.080 [.075, .086]	< .001	--	--	--	--
8. Metric	985.410	329	< .001	.983	.981	.075 [.070, .081]	< .001	7	78.787	35	< .001
9. Metric-P	968.569	309	< .001	.983	.979	.078 [.072, .083]	< .001	7	14.459	15	.491
10. Scalar-P	971.347	324	< .001	.983	.980	.075 [.070, .081]	< .001	9	19.342	15	.199

Note. CFI = Comparative Fit Index, TLI = Tucker-Lewis Index, RMSEA = Root Mean Square Error of Approximation, CFit = *p*-value for test of closeness of fit.

Note. From "Children's social emotional competence in Pakistan and Sweden: Factor structure and measurement invariance of the Social Competence Scale (teacher edition)" by Thomas, Kågström, Eichas, Inam, Ferrer-Wreder & Eninger. (2022). Manuscript submitted for publication.

Within Sample Substantive hypothesis testing.

(*H2*) The Swedish and Pakistani bi-factor model implies that there is shared variance among all items (i.e., social emotional competence) *and* domain-specific shared variance among the prosocial items, among the emotion regulation items, and among the academic skills items. In other words, a bi-factor model assumes a general, or global factor, onto which all items load, and a series of skill-specific grouping factors (e.g., prosocial, emotion regulation,

academic skills). This is consistent with the CASEL model (Weissberg et al., 2015) associations between prosocial/communication skills, emotional regulation skills, and academic skills.

Comparative-based hypothesis testing and Research Question (RQ).

(*H3*) It was hypothesised that measurement invariance for the SCS-T scale would be identified and thus allow for a group-based comparison of teacher-reported social and emotional competence (Social Competence Scale, SCS) in these two samples of children growing up with varied economic resources/conditions, cultural norms, and educational experiences. Multigroup analyses, starting with a configural invariance (equal form) model. Configural invariance is when the same factor structure holds across groups, in this case across Swedish and Pakistani samples. A metric invariance (equal loadings) model was then specified. Metric invariance includes both equivalent factor structures and equal factor loadings.

As shown in Table III, the metric invariance model fit significantly worse than the configural invariance model. As a result, modification indices were used to identify factor loadings that were not equivalent. All factor loadings for the general factor and the loading for one of the emotion regulation items (SCS6) were freed to vary across groups. This partial metric invariance model fit as well as the configural invariance model. Partial scalar invariance model was then specified. Scalar invariance includes equivalent factor structures, equal factor loadings, and equal indicator intercepts (or thresholds) whereas, partial scalar invariance means that some items do not have scalar invariance. The initial partial scalar invariance model added equal thresholds across groups for all items except SCS6. This model fit worse than the partial metric invariance model (not shown in the table). Modification indices were used to identify thresholds that were not equivalent and were then freed. The final result was a partial scalar invariance model in which five items had equal thresholds and could be compared across the two samples. The five items were SCS19, SCS22, and SCS25 from the social competence subscale and SCS15 and SCS21 from the academic subscale.

(*RQ*) Items SCS19, SCS22, and SCS25 from the social competence subscale and SCS15 and SCS21 from the academic subscale, from the Swedish and Pakistani groups, were compared. On the means of the latent variables that exhibited partial scalar invariance: social competence and academic skills. Compared to the Swedish group, the Pakistani group was 1.80 units lower on social competence ($z = -6.41, p < .001$) and 1.86 units lower on academic skills ($z = -7.87, < .001$).

Discussion

The overall aim of this dissertation was to explore associations between social emotional competence and adjustment among preschool-aged children who live in culturally diverse settings, and to relate empirical findings from the studies in this dissertation to developmental theories and other contemporary relevant research. This was achieved theoretically by examining childcare, culture, and child development in Sweden, from a Nordic standpoint (Study I), and empirically through describing the social emotional competence and adjustment of samples of children aged four to six years old who attended preschool in Sweden (Studies II and III) or Pakistan (Study III).

The following discussion section is subdivided into four parts. First, main conclusions from each study are summarised and considered; next, I raise some practical issues of importance from Studies II and III, including study strengths and limitations; following, a discussion of the need for equitable access to SEL in the current context children are developing in, and lastly, future research and practice priorities are considered.

Summary of Main Findings from Studies I, II, and III

Study I

Overall, the illustrative review of empirical findings presented in Study I showed some beneficial long-term outcomes as a result of out-of-home ECEC contexts and, in terms of high quality ECEC settings, some short-term benefits were found (e.g., positive emotional expressions at 48 months of age; Hagekull & Bohlin, 1995). Generally, however, in terms of social skills, aggression, noncompliance, and verbal abilities, quality of the ECEC context is not regularly associated with short-term benefits. A few limitations are noted here which possibly explain these findings: samples used in the longitudinal studies summarised in Study I were fairly homogeneous (i.e., middle class, two-parent families) and these studies were conducted a few decades ago when Sweden was far less culturally and linguistically diverse as it is currently.

We conclude in Study I that more research, particularly considering the growing cultural diversity in Sweden, and in other countries, within the context of ECEC is vital to continued growth in the area of child development and care.

In particular, in terms of empathy and moral development, how does the quality (both structural and process features) of ECEC settings contribute to this development, and to other social emotional competencies in light of historic (e.g., indigenous groups) and growing cultural diversity? In terms of ECEC as the setting condition (i.e., places; Bornstein, 2017), we need to remember that it can include, in addition to the educators, the family/caregivers and the wider community members; in an increasingly diverse society, methods which include input from parents and community members of the children would likely help us to gain a broader sense of the social values where the child is developing. Lastly, considering cultural differences in fostering each of the ethics in Jensen's model (2011), additional research is needed to explore how Swedish educators in ECEC settings view their role in terms of supporting children's moral development and how do teachers see moral and social emotional learning in relation to each other?

Study II

Study II provided initial support for the adequate reliability, factor structure (i.e., construct validity) and feasibility of scales from the PKBS and an empathy scale from the CPTI for use with preschool children living in multicultural urban Swedish contexts. Specifically, the initial psychometric hypothesis (*H1)* was supported by the model fit indices, factor loadings and latent construct correlations (i.e., concurrent validity), as well as composite reliabilities, based on a final PKBS five-factor and empathy one-factor model. The factor structure of the PKBS in this Swedish sample was similar to previous factor models (i.e., three social skills factors [social cooperation, social interaction, and social independence], and two internalising problems factors [social withdrawal and anxiety/somatic difficulties]) producing a five-factor model that fit the data well.

Previous studies have shown factorial validity extracting similar factors (e.g., Merrell, 1994; Shokri et al., 2013) and statistically significant factor loadings (Muñoz et al., 2011). Carney and Merrell (2002)'s internal consistency scores, between English and Spanish versions of the PKBS, were nearly identical between translations, when the social skills scales were grouped together (.93) and the problem behaviour scales were grouped together (.96). Unfortunately, other types of factor analysis approaches were not considered in this study, due to the small sample size (Carney & Merrell, 2002); this is where using Bayesian approaches to testing construct validity allow for a more detailed analysis despite a modest sample size.

Initial inspection of the factor loadings, however, did indicate several items which did *not* load onto their respective factors, possibly suggesting that teachers who conducted the ratings responded differently to these items in the Swedish translation of the PKBS, relative to how teachers who rated these

items in the English version of the measure. Returning to the idea of Bornstein's Specificity Principle, it is also possible that specific circumstances locally in the preschool context, such as preschool ethos and preschool teacher education create diversity and rich differences between groups; for example, the Swedish preschool context is rather unique in that high-quality ECEC is universally provided and guided by a national curriculum (Study I).

Because the national curriculum implies an encouragement of children's emotional development, empathy and social skills, adults working in this context would, presumably, be better versed on these topics than countries without a national curriculum. These findings warrant more research exploring differences and similarities (e.g., quality of ECEC, responsiveness of caregivers, etc.) to help explain these nuanced differences across diverse settings and within the specific and unique life conditions that children are living in. For the purposes of this study, and without abandoning the original measurement theory, we identified and removed these problematic items (for this sample) to produce a five-factor PKBS model that fit the data well. Additionally, a one-factor model for the empathy scale supported the CPTI's initial factorial validity of the CU dimension and our original theoretical grouping of the items (*H2*).

With respect to the factor correlations (*H3* and *H4*), strong positive relations existed in the expected directions among nearly all latent factors (i.e., CASEL model; Weissberg et al., 2015) with a strong positive association between empathy and social interaction. The association estimate between empathy and anxiety was negative, which is in-line with some previous studies (Izard, 2002; Warden & Mackinnon, 2003); however, I would like to point out to the reader that the credibility interval indicated that a small positive association could not be entirely ruled out. Furthermore, the particularly strong positive association between empathy and social interaction is, partly, supported by the phenomenon described as a "performance deficit" rather than a "competence deficit"; where withdrawn children, having fewer social interactions, find anxiety in social situations to be heightened, and although they feel empathy towards other children, they may have difficulty expressing empathy (Kopala-Sibley & Klein, 2017). This means that, although social interaction is a more general construct than empathy, it may largely, facilitate being able to practice empathy behaviours.

Nonetheless, the negative association between empathy and anxiety, is in line with studies describing children who are better able to respond in social situations and at being better able to express empathy behaviours; inversely, describing withdrawn children as being less capable of expressing empathy behaviours (Izard, 2002; Warden & Mackinnon, 2003). Typically, children who are able to make friends have more opportunities for ongoing social interactions and a history of positive social interactions; this helps children to feel

more comfortable in social situations with their peers and teachers and may even contribute to a positive classroom climate (Denham et al., 2016). On the other hand, children who regularly withdraw from social interactions may have lower self-efficacy, be less liked by peers, and be at greater risk for further anxiety and internalising behaviours (Denham et al., 2016; Wichmann et al., 2004). Empathy is a nuanced construct and has behavioral as well as subjective emotion-based elements. It is recognized that the index of empathy used in Study II only captures aspects of empathy as a whole, and is reliant on the perspective teachers that maybe less reflective of the subjective experience of empathy and more focused on outward displays of empathic behaviors. A fuller picture of empathy as a multi-faceted construct would be an important complement to the findings of Study II.

These findings highlight the importance of the idea of person-context interactions in terms of understanding the complexity of human development (Dimitrova & Wiium, 2021); specifically pertaining to the unique personal relationships of the child and the broader cultural context the child is developing in. Going back to the phenomenon of "performance deficit", a socially withdrawn and/or quiet child may be mistakenly perceived as lacking empathy or lagging in terms of moral development if we delineate social norms with too narrow a lens without cultural considerations. Personal, family, and cultural norms, as well as the type of society (individualistic/ collectivistic) we live in, influence how we view and interpret social behaviours, in particular, attention-avoiding behaviours, and whether or not we view these behaviours as maladaptive (Heinrichs et al., 2006). Additionally, very little research has been done examining the relationship between social anxiety and cultural norms (Heinrichs et al., 2006). In terms of tailoring SEL interventions with this contextual focus in mind, particularly in culturally diverse populations, interdisciplinary collaboration (e.g., including educators, special educators, after school programmers, and psychologists) and triangulating measurement (e.g., including parental input) would allow us to gain a broader viewpoint of the environment where the child is developing (e.g., Sauve & Schonert-Reichl 2019).

In addition to the strong positive association between empathy and social interaction, there was a particularly strong latent correlation between the social cooperation and social interaction scales. The social cooperation items are meant to index cooperative behaviours shown by children in social situations, and the social interaction items concern children's ability to get social exchanges going with others (Merrell, 1995). This high factor correlation should be viewed as a tentative result that should be examined in future Swedish studies with preschool children. If such findings are enduring in other Swedish samples, future qualitative research studies could be focused on gaining insight into how teachers may see the social cooperation and social interaction items as distinct or similar, and refining the items to either merge them into

one factor or improve the scales so that the unique properties of the factors are made clearer.

Because results were largely in expected directions, and patterns among social emotional competencies and internalising behaviour/problems were consistent with prior theory and research studies (e.g., Weissberg et al., 2015), the study results add support to the generalizability or relevance of relationship skills and social awareness, in general, in a multicultural urban Swedish preschool context. Also, our results highlight how specific domains of social emotional competence (social cooperation, social interaction and social independence, from the PKBS) and empathy are connected, suggesting an opportunity to expand the SEL field together with insights from the field of moral development.

Study III

Study III provided initial support for adequate reliability, factor structure (e.g., construct validity) and feasibility of the SCS-T for use with children attending preschool in Swedish and Pakistani urban contexts, as well as, generally, highlighting the importance of establishing psychometric properties of SEL instruments across cultural and societal contexts where children are living.

Specifically, the initial psychometric hypotheses (*H1 & H2)* were partially supported by the fit indices, factor loadings, and latent construct correlations, as well as composite reliabilities, based on a final SCS-T bi-factor model. Because a bi-factor model implies that there is shared variance among all items as well as domain-specific shared variance among the prosocial items, emotion regulation items, and the academic skills items, these findings highlight just how interrelated these constructs/aspects of development are and how they work together in the everyday actions and lives of children. Additionally, this model fit better than either the tested 3-factor or 1-factor model in *both* the Swedish and Pakistani study samples, even though the children in these samples are growing up with varied economic resources/conditions, cultural norms, and educational experiences.

In regard to identifying measurement invariance for the SCS-T scale (*H3*), we were able to identify a partial scalar invariance model in which five items from the social competence and academic subscales allowed us to compare the samples at a group level. Lastly, by comparing the means of these latent variables between the samples (*RQ*), we found that the Pakistani sample had, both, lower social competence, and lower academic skills, than the Swedish sample. Important for the reader to remember, because *partial* invariance was achieved, we were only able to compare three items from the social competence subscale and two from the academic subscale; concluding nothing about emotional regulation between the two samples. These findings highlight the diversity between the two environments the children are developing in, but

also some nuanced and specific likeness between the samples in some aspects of social emotional competence.

Study III's cross-sample comparison of means gave us the opportunity to look at the similarities and differences in these behaviours of children who are developing in different nations and cultures. This work lays a foundation for future research to examine setting conditions for children in these national and cultural contexts in a systematic and intentional manner. The direction of this future research could fruitfully focus on social emotional competence in light of children's specific life conditions (i.e. the setting conditions) during development. Children living in cultures with predominantly joint family structures (as was the case, traditionally, in Pakistan) tend to exhibit more prosocial behaviours than children who live in strictly nuclear families (Singh et al., 2014). Pakistan's urban population over time, however, has largely trended towards the nuclear family system as is found in Sweden (Lodhi et al., 2021). Specific studies with a consideration and measurement of conditions of development in relation to children's social emotional and moral development are clearly needed and valuable.

Throughout this dissertation, preschools represented a specific and local setting condition (places; Bornstein, 2017) or in the terms of the CASEL model (Weissber et al., 2015), a key setting. As described in the introduction of this dissertation, Pakistan's education system (particularly early education) faces a lack of funding and a shortage of educated teachers making formal high-quality ECEC very difficult to provide to children (Khan, 2018). On the other hand, Sweden's ECECs are guided by a national curriculum and the majority are staffed with responsive caregivers prioritising communication and problem solving, as well as emotional development and regulation, and empathy (Swedish National Agency for Education, 2016). Since Pakistan's culture has trended towards a predominantly nuclear family system, parents cannot be as reliant on extended family as they once were; and in turn, must rely on outside state or private care (i.e., ECEC) (Lodhi et al., 2021). With near-universal access to high-quality ECEC in Sweden, and a lack of access to formal high-quality ECEC in Pakistan, it might not be surprising that the sample in Sweden showed greater social competencies and higher academic skills as compared to the Pakistani sample (*RQ).*

Further, high-quality ECEC is especially beneficial to children with fewer resources at home (Hagekull & Bohlin, 1995); if we consider that Sweden's gross domestic product (GDP) per capita is nearly sixty times that of Pakistan's, together with our findings, purporting a greater emphasis on the need for high-quality ECEC in countries which are similar would be advantageous (i.e. developing countries who have trended away from the support of the joint-family structure).

Practical Issues of Importance in Studies II and III

Theoretically rooted and empirically sound assessments remain best practice in educational settings to identify children's behavioural and emotional strengths/weaknesses (Greenberg, 2010), particularly in culturally diverse key settings. Assessments can inform researchers and practitioners regarding children's behavioural and social development, with a consideration of what is competence and what is adaptive in a given social and cultural context (Keller et al., 2006; Tam & Lee, 2010; Tudge et al., 2000).

More generally, teachers' views and evaluation of the individual survey items and response options of instruments like the PKBS, empathy scale and SCS-T are needed. Having more insight at the item and response option level of these surveys could lead to more efficient surveys and improved teacher acceptability, improved psychometric properties, as well as better face and ecological validity of these instruments. Beyond these measurement and analysis innovations, our substantive study hypotheses in both empirical articles were largely confirmed by the results in that the measured domains of social emotional competence were generally in-line with previous studies and CASEL's domains. Returning to Bornstein's (2017) specificity principle, this type of research is vital to conduct, rather than assuming that the theories of social emotional competence like the CASEL model would apply to children universally, and that while general patterns maybe shared, there maybe also be differences that need further exploration (e.g., Study III invariance testing results).

Important limitations in Studies II and III include: (i) both study designs were cross-sectional and therefore we were unable to gain any insight into causality or developmental change over time; (ii) both studies included children coming from preschools that were interested in participating in the larger intervention studies and in receiving access to, and training in, an SEL intervention (Sweden), or training in classroom management (Pakistan); (iii) Study II's sample size was modest; (iv) socio-economic status at the child level was not collected for the wider intervention study and therefore was unavailable for both empirical articles and, (v) all constructs in both empirical studies relied on a single rater (i.e., the child's teacher) and, as such, are subject to measurement error.

Although Studies II and III relied on the sole reporting of the child's teacher, previous studies support the ability of teachers to accurately report on children's social emotional competence as they are also the individuals who observe, on a daily basis, the behaviours of the child in a social environment (i.e., classroom) (e.g., Gustafsson et al., 2017; Jones et al., 2015). When compared to parent and self-report versions of the strengths and difficulties questionnaire (SDQ; a commonly used instrument to screen children for social emotional

problems), for example, Gustafsson and colleagues (2017) found similar patterns in social emotional problems in a sample of Swedish preschool aged children (*N*=815) using the SDQ teacher version. Moreover, Jones and colleagues (2015) illustrated the predictive power of early teacher ratings of SEL on later development using the teacher-rated SCS-T prosocial/communication skills subscale. Specifically, results showed that children (*N*=753), rated by their teachers as having better skills in this domain in kindergarten, were more likely to graduate from high school and college, more likely to have stable employment and to have fewer problems on young adult indicators of crime, substance use, and poor mental health (Jones et al., 2015).

However, to view the nuances of the setting condition where the child is developing (places; Bornstein, 2017), it would be valuable to employ future mixed-method approaches (e.g., observations plus triangulation of surveys to include parents, children, *and* teachers) and longitudinal studies; this would help to fully capture similarities and differences in the ways in which social competencies develop and operate across cultures. Having said this, the results of Study III related to the invariant and non-invariant items isolated through the multi-group comparison can still inform and facilitate additional theoretical, descriptive, and comparative studies exploring cultural similarities and differences of the construct of social competence.

It should be noted here that Study III, pointed to relatively weak invariance (i.e., five of the original twenty-five items could be compared). Standards for acceptability of partial invariance vary from notions that half of all items (Steenkamp & Baumgartner, 1998) to a majority of items (Vandenberg & Lance, 2000) on a factor should be invariant. However, these guidelines are not empirically supported and there remains ambiguity in the field regarding best practice for testing and interpreting partial invariance (Putnick & Bornstein, 2016). Future research evaluating the usefulness of partially invariant scales in research and the development of empirically based standards and thresholds for partially invariant scales will be valuable next steps in advancing the global development of child social competence scales.

Specific aspects of culture were not measured in the studies, but a general consideration of culture as it relates to ECEC settings were important to understanding and interpreting the meaning and implications of the results. Further, the samples of children who participated in Studies II and III were not intended to be nationally representative samples, so no cross-national comparisons are warranted from Studies II and III.

Despite the limitations, Study II provides educators and researchers the support to administer the PKBS and CU in an urban multicultural Swedish preschool setting and Study III provides support for the use of the SCS-T in urban Swedish and Pakistani preschool settings. In regard to Study I, it is important

for the reader to know that it is a commentary and not a systematic review of the research literature. This study focused on Jensen's three ethics; however, the field of moral development is incredibly diverse and other perspectives are certainly relevant. This chapter adds much needed insight into the ecology of ECEC settings from a Swedish perspective in terms of the Nordic welfare model, as well as offering future considerations in the field of moral development.

The availability of valid and reliable measurements of social competencies in diverse cultural contexts are fundamental for informed decision-making surrounding prioritisation and implementation of SEL interventions and practices. Measurement can help to inform researchers, educators, and practitioners alike; and promote children's social emotional development in a global context with consideration of unique social and cultural settings (Keller et al., 2006; Tam & Lee, 2010).

Considerations for Equitable Access to SEL

Coming from the starting point that all experienced emotions are valid and have a role to play in social interactions and in individual development, feeling good helps a child to make friends and assists in ongoing social interactions; a happy child's positive well-being and positive social interactions help to make them more likeable to their peers and teachers and contributes to a positive classroom climate (Denham et al., 2016). Whereas a child who is displaying or is overwhelmed by anger may respond with hostility in a variety of contexts (as a typical social response) and is often less liked by their peers (Denham et al., 2016): this in turn, contributes to a more hostile classroom environment. Moreover, a child who is experiencing overwhelming sadness may be harder to play with than a child who is exhibiting happiness and therefore the first example child may be often ignored or overlooked by their peers (Denham et al., 2016). In terms of individual well-being, displays of aggression and impulsive behaviour towards peers, as well as being withdrawn and showing less prosocial behaviours, are related to higher incidence of depression, anxiety, and low academic competence (Jansen et al., 2011).

Attending school, including ECEC, provides a child a context in which to further develop a social emotional skill set, as well as the space to experience positive feelings, such as feeling happy (Izard, 2002). During the writing of this dissertation, I was working for a large public-school board in Quebec, Canada (with children beginning schooling at age three or four years of age). A large part of my role was helping administrators and teachers to understand the importance of fostering social emotional competence for these reasons; both, in terms of individual well-being, development, adjustment and mental health over the individual's lifespan and, in terms of collective (i.e., classroom

and society) rewards and benefits (Denham et al., 2016). Of all of four positive frameworks presented in this dissertation, the SEL approach has the most direct relevance to the studies presented, but also in terms of the practical broader educational context where I was working. Theoretically, empirically, and practically speaking, the SEL framework focuses on the process of developing children's abilities to understand and manage social and emotional aspects of their daily lives and can be achieved primarily in educational settings. Of course, this depends on the collaboration of administrators, educators, school psychologists and community members; and although the field of SEL has gained momentum since CASEL's nascency in 1994, it was still very difficult to convince administrators and educators to regard social emotional competencies as complementary to academic achievements and accolades and not, merely, a dispensable second fiddle.

Results in Studies II and III highlight the reliability of teachers in various parts of the world to measure social emotional competencies of children. As noted, development of SEL in educational contexts hinges largely on teachers, administrators, community members, and psychologists collaborating; this is not only in terms of modelling competencies, but accurately measuring these competencies, interpreting the results in a meaningful way in order to guide decisions in terms of developing children's social emotional skill sets. In terms of measurement, theoretically rooted and empirically sound assessments remain best practice to identify children's behavioural and emotional strengths/weaknesses (Greenberg, 2010); but who should be responsible for rating children and administering measurement in the educational institutions? With a global shortage of mental health professionals and, specifically, school psychologists (WHO, 2021; Jimerson et al., 2008), as well as a global and critical shortage of teachers (UNESCO, 2016); both shortages of which are worse in the developing world and have been, further, exacerbated by the pandemic, who is available to perform assessments and implement and/or improve SEL interventions? I have highlighted, in Studies II and III, the reliability of teachers to measure SEL, however, along with the number of literacy and academic assessment teachers are expected to perform throughout the school year, should they also be expected to assess SEL?

Beginning in March of 2020, assessment, and implementation of SEL, in ECEC and other school settings, became even more difficult; as preschools and other types of schools around the world closed their doors leaving 99% of the world's 2.36 billion children with some movement restrictions, rampantly exacerbating the pre-pandemic, global lack of access to quality ECEC (Gromada et al., 2020). Eventually, online learning platforms were offered and very few children returned to in-person socialisation or learning until the fall of 2020; even then, most children attended a hybrid model of schooling (e.g., one day in person, one day online, etc.); with 1.8 trillion hours of in-person learning lost (UNICEF, 2021). Without universal access to computers

and high-speed internet, online learning did not happen equally for all children. Additionally, navigating social life and rules became non-normal as face-to-face peer interactions became virtually non-existent. Social competencies, such as being thoughtful and kind, may have been more difficult to exercise in the virtual classroom routines when all children were muted and receiving instructions from teachers via online; emotional competencies, such as perceiving others' feelings and emotional displays, became exclusive to the interactions within the family that the children lived with. Covid-19 deprived many children the context to practise, learn and improve social emotional competencies. Although preschools and elementary schools, for the most part, remained open in Sweden, public health recommendations and restrictions (e.g. travel restrictions, discouraging social interactions with friends and family) nonetheless encroached on the lives of many children living in Sweden (Nolbris et al., 2022). For example, children living in Sweden (N=774; aged 4-12), who refrained from social activities, reported significantly higher rates of perceived anxiety than children who remained largely unaffected by reduced social interactions (p=0.001); further, children whose parents' income was affected by the pandemic, and were affected by reduced social activities, reported significantly higher rates of intense anxiety (p=0.004) (Nolbris, et al., 2022).

Child development is tied to specific cultural and social contexts in which the child is developing. These cultural and social contexts allow for specific socialisation conditions that interact with the unique abilities and competencies of the developing child (Albert & Trommsdorf, 2014). Although children are now attending school in person, current contextual restrictions (i.e., remaining in respective 'bubbles', wearing masks) have made it difficult to resume pre-pandemic 'normal' social interactions. By overlooking the numerous variations and contextual settings children are living in; including cultural, historical, developmental, and educational ones, we are largely ignoring many growing social emotional deficits during key periods of development. Globally, administrators, teachers and parents are worried about the academic set-backs children faced because of staying home during the pandemic, so academic curriculums have been ramped up to make up for 'learning-lost'; however, based on the interconnectedness of SEL and academics (e.g., findings from Study III), SEL 'learning lost' should be as prioritised as any steps to make up for academic 'learning lost'.

Study I, takes up the discussion surrounding the need for more research within the context of ECEC as vital to continued growth in the area of child development and care; particularly considering the growing cultural diversity in Sweden, and in other countries. Study II and III, address this need and bring together moral and social emotional competence, in the context of ECEC; specifically, this dissertation (1) highlights the importance of establishing psychometric performance (good validity and reliability) of SEL instruments

across diverse children living in varied circumstances and access to resources; and (2) offers the potential promise of measurement in linguistically and culturally diverse settings.

Future Research

"Can there ever be a workable global vision of the precise relations between culture and development that reflects reality, is not ethnocentric, and upholds human dignity and rights?" (Ferrer-Wreder & Thomas, 2012, np). Culture offers layer upon layer of discovery and contemplation. Examining social emotional competence is an increasingly recognized and dependable predictor of an array of outcomes (e.g., education, employment, criminal activity, substance use, mental health, and well-being across the life-course [Jones et al., 2015]). The availability of valid and reliable measurement of social competencies within, and between, diverse cultural contexts is foundational to informed decision making surrounding prioritisation and implementation of social emotional learning interventions (Cefai et al., 2022).

We were able to, in Study II, support the initial use of PKBS in an urban preschool Swedish context, and in Study III, support the use of both the Swedish and Urdu translations of SCS-T, allowing for their initial use and further empirical and practical development in these respective contexts. Specific results relating to both the invariant and non-invariant items (i.e., items which can be compared and items which are unique in their factor loadings and cannot be compared between groups) can inform and promote additional theoretical, descriptive, and comparative considerations in further research. Future research comparing more studies within PATHS' trials, specifically considering measurement invariance, would add to the future direction of SEL in developmental science.

There is growing evidence that social emotional competencies in childhood can be further supported in preschool (e.g., Domitrovich et al., 2017), and that aspects of social emotional competences, such as self-regulation and social skills, have been singled out as having global relevance for today's young people (UNESCO, 2016). Future SEL research should also be conducted outside of school settings with a greater emphasis on children being care for at home prior to their entry into ECEC settings outside of the home.

Other areas in need of more research are connected to the large gaps in research focus on knowledge of child development from most of the world's population (Berry, 2019). The future direction of developmental science would benefit from the consideration of diversity of ecologies across the globe and to seriously consider the vastness, variation, and richness of the multidimensionality of development itself and developmental processes; to include

and embrace the underrepresented, minorities and micro-cultures and the assets within these populations.

For example, as an illustration of the potential of this idea, recently, Llorent and colleagues (2020) examined the relationship between social emotional competencies and empathy in a culturally diverse group of primary aged group of children (*N*=516*),* from Cordoba, Jaen, and Malaga (Spain); categorising children as belonging to the majority ethnic group (i.e., Spanish) or the minority (i.e. Gitano [Spanish Roma], first, and second generation immigrants). They found a significant and strong relationship between high level of *self-awareness* and a high level of *empathy* and in particular, children belonging to the majority group demonstrated greater empathy than children belonging to the ethnic-cultural minority groups (Llorent et al., 2020). The authors suggested their findings could be the result of the promotion of cultural diversity in Spain, and its influence on the social consciousness of the majority group (Llorent et al., 2020).

Although a within sample subgroup focus was not examined in the studies in this dissertation, Llorent et al.'s (2020) findings and my overall experiences examining social emotional competencies in children, has led me to consider how other minority or micro-cultures across the globe are considered within larger societies or majority groups; in particular, indigenous, and First-Nations peoples' cultures from various parts in the world. For example, we now know that more than 150,000 children were taken from their homes between 1883 and 1997, in Canada, and forcibly put in distant boarding schools (i.e. *'Indian Residential School system'*); this was done to culturally assimilate the indigenous population into the European catholic culture; this is now referred to as *cultural genocide.* Just over 4,000 children were confirmed to have gone missing or have died during this period, and over 1,300 child graves have been uncovered in the last two years; there are currently 6,750 survivors of residential schools living in Canada today (Truth and Reconciliation Commission of Canada, 2015). Similar discrimination and abuse occurred against the Sami children (indigenous populations in the Nordic countries) in Sweden, between 1913 and 1962; such as aggressive assimilation, physical abuse, 'Christianisation', segregated schooling, and banning the use of native languages (Chatterjee, 2021).

How does moral development and social and emotional competence look in populations suffering from and coping with such gross intergenerational trauma; and are we equipped with appropriate and psychometrically sound instruments to answer these questions? Generally, there is very little research examining the relationship between coping (e.g., from intergenerational trauma or violence) and moral development or empathy, yet future examination of similar diverse ecologies and people across the globe could offer a rich contextual perspective for developmentalists; and a true understanding of

what is alike and what is unique in the settings and life conditions where children are developing in order to promote cultural diversity and positively influence the social consciousness of the majority group.

As mentioned, one of the limitations of Studies II and III, was that socio-economic status at the child level was not collected for the wider intervention study and therefore was unavailable for both empirical articles. A recent study by Martinsone and colleagues (2022) found an association between higher socio-economic status of parents (i.e., higher education and/or occupation rate) and higher levels of social emotional competence (e.g., self-awareness and responsible decision making), as well as a reduction in behavioural difficulties (e.g., emotional and conduct problems) in preschool aged children, as rated by their teachers (Martinsone et al., 2022). Interestingly, socio-economic status did not directly correlate with learning outcomes in this sample; however, when socio-economic status was controlled for, higher levels of social emotional competence was associated with higher levels of learning outcomes.

The fields of social emotional competence, SEL, and positive development more generally have not yet realised their potential to have a global public health and educational impact; and as illustrated by this dissertation one of the missing pieces involves accessible, *inclusive,* and high-quality measurement of children's social emotional competence. Much more needs to be done to make the measurement of social emotional competencies more widely accessible, affordable, and practically useful in various nations and cultures (UNESCO, 2016). In other words, there is a need for the conceptualization of what social emotional competence *is* and its assessment to be culturally appropriate within the contexts and transitions children encounter as they progress through childhood, adolescence, and into adulthood.

Practically, this involves examining the psychometric properties of key instruments with diverse children, as well as open and free access to high quality instruments that combine sound psychometric properties with availability in a variety of languages, culturally appropriate, and with good ecological validity. This dissertation adds to the wider positive development research base, as well as the specific fields of SEL and more distally moral development (through the study of empathy, which is part of SEL and moral psychology/development literature) as well as alleviating some of the need for the above, by demonstrating empirically and building on conceptual structures to support and guide SEL in diverse settings.

Svensk sammanfattning (summary in Swedish)

Det övergripande syftet med denna avhandling var att undersöka samband mellan olika aspekter av barns sociala och känslomässiga kompetenser i grupper som är olika utifrån kulturella faktorer. Mer specifikt undersöktes samband mellan vad som kan beskrivas som olika relationella kompetenser (att kunna samarbeta, lyssna, turas om och be om hjälp), social medvetenhet (t ex förstå känslor), självreglering (t ex att uttrycka egna behov och känslor samt att kontrollera egna impulser), och empati. Utöver att studera de inbördes relationerna mellan dessa förmågor, undersöktes också kopplingar till internaliserande beteenden (såsom ångest och social tillbakadragenhet). Att noggrant kunna förstå och bedöma barns sociala och känslomässiga kompetenser, med hjälp av psykometriskt välfungerande instrument, är avgörande för att globala insatser som syftar till att främja barns sociala och känslomässiga utveckling, skolprestationer och hälsa ska kunna undersökas och utvärderas.

Resultaten från avhandlingen relateras till utvecklingspsykologiska teorier kring specificitet (Bornstein, 2017), samtida forskning avseende socioemotionellt lärande och moralutveckling samt till Berrys (2015) ekokulturella modell. Vidare vägleds tolkning såväl som inramningen av de aktuella resultaten till Collaborative for Academic, Social, and Emotional Learning-modellen (CASEL; Weissberg et al., 2015) avseende socioemotionell kompetens.

I Studie I granskades teori och forskningslitteratur av relevans för barns utveckling, inklusive moralutveckling, inom ramen för den svenska förskolan (ECEC) som del av den nordiska välfärdsmodellen. I studien diskuteras särskilt hur etik som en del av moralutveckling återspeglas i målen för och utformningen av den svenska förskolan samt hur svenska förskolemiljöer kan främja olika aspekter av barns moralutveckling.

I Studie II undersöktes psykometriska karakteristika och faktorstruktur i en beteendeskala för förskolebarn (PKBS) samt ett index för empati. Studiegruppen inkluderade ett svenskt urval av fyra till sexåring barn (N = 115). Resultaten pekade på en väl passande femfaktorsmodell för PKBS och en enfaktorslösning för empati (posteriort prediktivt p-värde = 0,246), en god intern konsistens (ω 0,73 till 0,92) vilket är i linje med tidigare forskning och CASEL-modellen. Förmåga till goda relationer hade ett positivt samband med empati och ett negativt samband med internaliseringsproblem. Resultatet gav stöd för användning av såväl beteende- som empatiskalan i svenska förskolor.

I Studie III undersöktes psykometriska karakteristika hos ett lärarskattat mått på små barns sociala och känslomässiga kompetenser (Social Competence Scale – Teacher edition [SCS-T]). Studiegruppen inkluderade två olika urval av barn i förskoleålder i Pakistan (N = 396) respektive Sverige (N = 309). De två grupperna i Pakistan respektive Sverige skiljer sig åt i och med att de två kontexterna varierar med avseende på ekonomiska resurser/villkor, kulturella normer och utbildningsnivå. Genom strukturekvationsmodellering och konfirmatorisk faktoranalys identifierades passande modeller. Här pekade resultaten bland annat på delad varians för alla påståenden i det lärarskattade måttet. Utöver det identifierades också domänspecifik delad varians för påståenden avseende prosocial förmåga, känslomässig reglering och skolfärdigheter. Testning av invarians mellan grupperna visade att ett urval av påståendena från varje faktorstruktur uppvisade partiell skalmässig invarians, medan fem påståenden hade lika tröskelvärden och var jämförbara mellan grupperna. Z-tester visade signifikanta (p <.001) latenta medelvärdesskillnader mellan grupperna: jämfört med det svenska urvalet hade det pakistanska urvalet 1,80 enheter lägre social kompetens (z = -6,41, p < ,001) och 1,86 enheter lägre på skolfärdigheter (z = -7,87, p < ,001). Implikationerna av dessa resultat diskuteras i relation till insatser som syftar till att främja positiv utveckling hos barn i olika delar av världen.

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